

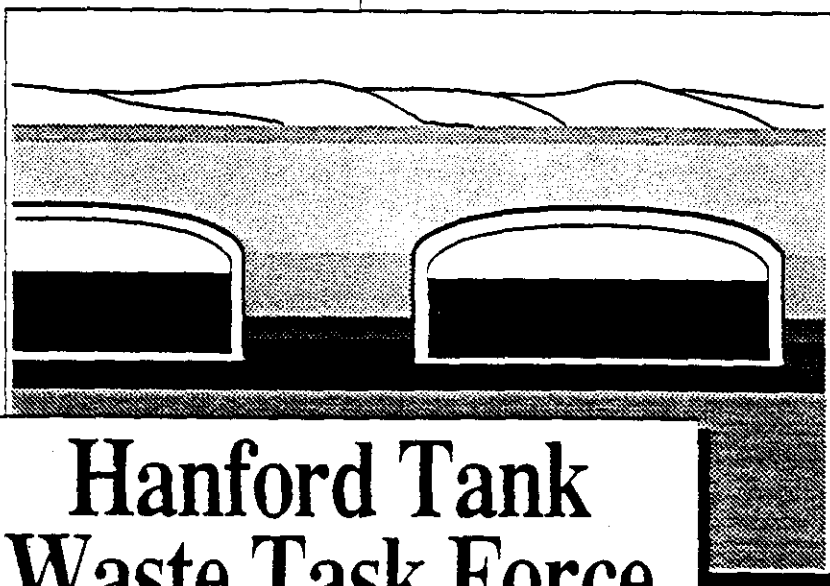
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# Final Report



## Hanford Tank Waste Task Force

Submitted to:

Washington State Department of Ecology

U.S. Department of Energy

U.S. Environmental Protection Agency

Submitted by:

The Hanford Waste Task Force, 1993

September, 1993



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September 1, 1993

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Gerald Emison, Acting Regional Administrator  
U.S. EPA Region 10  
1200 Sixth Avenue, SO-141  
Seattle, WA 98101

Dear Mr. Wagoner, Ms. Riveland, and Mr. Emison.

I am proud to convey to you the final report of the Hanford Tank Waste Task Force. The Task Force was convened by your three agencies in order to develop and help to integrate the values which a broad cross-section of stakeholders in the Hanford cleanup have on those issues in the Tri-Party Agreement which you are currently renegotiating. We understand the complex, and yet limited nature of the negotiations you have underway. We believe that this report provides direct input into those negotiations and we trust that you are able to produce an agreement which reflects these principles and values.

The Task Force has diligently discharged its responsibilities, and I would like here to place our work in context for you and the negotiators. The Task Force product consists of two major outputs: (1) principles which we believe are germane to the overall Hanford cleanup, and (2) values which refer specifically to the implementation of the Tank Waste Remediation System (TWRS). The Task Force's efforts also continued the important effort of building a common information base among all participants, including the agencies, that can serve as a foundation for future discussions.

The report of the Task Force is worthy of significant consideration for three major reasons:

- First, it displays important stakeholder views on the cleanup without selecting specific remedial actions or technical solutions. It recognizes you retain your collective responsibility to manage the cleanup. It offers, however, explicit guidance on what areas need attention and what objectives you should strive for in order for the cleanup to proceed successfully.
- Second, the report conveys a strong Pacific Northwest perspective on the proper direction of the cleanup. While not speaking for the general public, the Task Force's representation is an excellent barometer of what the Pacific Northwest believes is necessary to conduct a successful cleanup. Of ultimate importance is the ability of the report, coupled with your responsiveness to it, to display to the Congress a Pacific

Northwest-based conviction that the Hanford cleanup can succeed and is worthy of essential national support.

- Third, the Task Force process continues the crucial imperative of building tribes, local government, and public input into key Hanford decisions and activities. Hanford is a past, present, and future resource of immense value, and its cleanup must be conducted with the support of many entities. For that to happen, the views of all vital interests must be integrated into your decision-making process. The Task Force is another strong step in that direction by all sides.

For these compelling reasons, we believe that our product should endure beyond these negotiations and should give continuing guidance on Hanford cleanup. This Task Force, as well as the work of the Future Site Uses Working Group, has helped us all take the first solid steps toward a productive collaboration among federal, tribal and local governments, workers, and key constituencies on the pace and fate of the Hanford cleanup. It is crucial that, as further steps are taken, future visions, principles and values necessary for subsequent decisions build upon our efforts, and not attempt to recreate them. We urge that you ensure that our work be used as the cornerstone we believe it is, and that it help shape your respective missions and be integrated into subsequent public involvement efforts you will undoubtedly initiate.

In particular, we believe that many of our recommendations can be a significant reference point for the anticipated site-specific advisory board to orient its work, and to assist as it creates its appropriate agenda with you.

The Task Force members appreciated the opportunity to assist you in these critical times. We received invaluable support from you and your staff and, in particular, the lead negotiators. We took our responsibility seriously and worked hard. Now, having completed our charge, we expect the values and principles we have articulated to be reflected in any renegotiated Agreement. We look forward to hearing from you regarding the outcome of the negotiations and the utility of this report.

Sincerely,



Mark Drummond  
Chairman

cc: Hazel O'Leary, Secretary, U.S. Department of Energy  
Mike Lowry, Governor of the State of Washington  
Carol Browner, Administrator, U.S. Environmental Protection Agency  
Barbara Roberts, Governor of the State of Oregon  
Elwood Patawa, Chair of Board of Confederated Tribes of the Umatilla Reservation  
Sam Penney, Tribal Chair, Nez Perce Tribe  
Wilferd Yallup, Tribal Chair, Yakima Indian Nation

**- ACKNOWLEDGMENTS -**  
**HANFORD TANK WASTE TASK FORCE**

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This project was funded by the U.S. Department of Energy. The Task Force was formed by the senior managers of the signatories to the Tri-Party Agreement: John Wagoner, Manager, USDOE Richland Operations Office; Mary Riveland, Director, Washington State Department of Ecology; and Dana Rasmussen, Regional Administrator followed by Gerald Emison, Acting Regional Administrator, US EPA, Region 10.

A Policy Committee provided policy support and attended all Task Force meetings. The Policy Committee consisted of Phil Hamric, Deputy Manager, USDOE Richland Operations Office, Dan Silver, Assistant Director, Washington State Department of Ecology, and Randy Smith, Director, Hazardous Waste Program for US EPA Region 10.

The lead negotiators for the three parties were Jim Bauer, USDOE Program Manager, Office of Environmental Assurances, Permits & Policy and Steve Cowan, Associate Deputy Assistant Secretary for Waste Management; Roger Stanley, Director, Tri-Party Agreement Implementation for the Washington State Department of Ecology and Jeff Breckel for Washington State; and George Hofer, Chief of Federal Facilities, Superfund Branch, US EPA Region 10. The lead negotiators attended and participated in all Task Force meetings. Their interaction with the Task Force was an ongoing and essential component in the Task Force's process. They were assisted by many colleagues who also proved to be valuable resources for the Task Force.

Pat Hale of Westinghouse - Hanford Company ably provided contract management. Special thanks go to Jon Yerxa, Program Analyst, Office of Environmental Assurances, Permits & Policies, USDOE; Mary Auckland, Celaine Hadley, and Sandi Murdock of Westinghouse-Hanford Company; and to Frank Rogers, media technician, and Cedric Bill of Boeing Audio-Visual Services.

Although holding public meetings was not officially a Task Force activity, Task Force members gained insight from comments made at two rounds of public meetings held in May and August, 1993. The Tri-Parties sponsored and helped the facilitators organize these meetings. Thanks go to Mary Getchell and Max Power, Washington State Department of Ecology, and Dennis Faulk, US EPA, in addition to the others already mentioned, for their contribution to the meetings' success.

The process was facilitated and staffed by Triangle Associates, Inc. in association with Ross & Associates Environmental Consulting, Ltd. The project team included project manager Alice Shorett, Martha Bean, Vicki King, Bill Ross, and Jerry Boese. Public meeting facilitation was also provided by team members Alinda Page and Jim Arthur. The team was supported by Dennis Clark, Jill Diesel, Leonard Jones, Ananda Miller, Christy O'Quinn, Suzy Schwarzlander, and Suzanne Walker.

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## ***GUIDE TO THIS REPORT***

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The Hanford Tank Waste Task Force was convened in May, 1993, by the US Department of Energy (USDOE), US Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology). These three parties were engaged in a six-month process of renegotiating key aspects of the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement.

The Task Force was charged with providing the negotiators with values relative to the Tank Waste Remediation System and with principles for the overall Tri-Party Agreement package. The group's work was completed by the end of September to coincide with the conclusion of the negotiations.

The Tank Waste Task Force, which met four times from May through September, 1993, consisted of representatives of tribal, state, and local governments, business, economic development, agriculture, environmental groups, interest groups focused on Hanford, labor, and public health. This report presents the results of the Task Force's five months of work.

This Report is organized as follows:

- The Preamble describes briefly the Task Force's overall goals for the approach, pace, and outcome of Hanford's cleanup.
- Chapter 1 presents the principles the Task Force articulated for the overall Tri-Party Agreement package.
- Chapter 2 presents Task Force values relative to the Tank Waste Remediation System. (The process by which the Task Force developed values is presented in Appendix F. The reader is strongly encouraged to consult the "Problem Statements" in this Appendix because Task Force members believe they are crucial for grounding the group's values in current realities at Hanford.)
- Chapter 3 describes in detail the purpose of the Task Force and the process it used to develop values and principles.
- A Glossary defines terms used in the Report.
- The Appendix contains the:
  - Charter

## ***GUIDE TO REPORT***

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- Groundrules that guided the Task Force process
- Letter of commitment from the Governor of the State of Washington
- A list of presenters and topics presented to the Task Force to develop a common base of information
- Summary statements of the Task Force's four meetings
- Process by which the values were developed, including key themes from small groups, "problem statements" relative to tank wastes, individual perspectives on problems and values, and individual worksheets.

## ***PREAMBLE***

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The need for cleanup and restoration of the Hanford Reservation is compelling and urgent. It is time to accelerate cleanup activities. It is time to protect the environment and the health and safety of the affected communities and the workers at the site. It is time to create a "learning culture" which empowers those with a stake in successful cleanup at Hanford, including workers, to constantly evolve new, applicable, and efficient management policies and technologies that lead to even more environmentally sound cleanup. It is time to "get on with it."

The Final Report of the Hanford Future Site Uses Working Group, "The Future For Hanford: Uses and Cleanup," provides essential guidance in uses of this land and of the Columbia River and provides important principles for guiding the cleanup. That Report and the work of this Task Force share a vision of a clean, accessible, and healthy Hanford environment that fosters economic prosperity and community diversity. This vision respects the treaty rights of the affected American Indian tribes, including the Nez Perce, the Confederated Tribes of the Umatilla Indian Reservation, and the Yakima Indian Nation and other Northwest Indian tribes. It is widely shared by residents of the Pacific Northwest.

Getting on with it means that we make use of available technology and resources now, and that we do so without precluding future application of emergent technology. We must do well all that we know now how to do, and we must persist in seeking answers for the questions that remain. That which is known must be applied lest it be wasted. That which is unknown must be acknowledged so that our research and development energies might be clearly focused and wisely applied.

For the past fifty years the mission of Hanford was production of nuclear materials; the full impact to human health and the environment remains in question. For the foreseeable future, Hanford's mission will be cleanup and restoration of the land, protection of the Columbia River it borders, and protection of communities affected by Hanford. It will be a demanding journey. Our own well-being and that of future generations demand that we embark on this journey immediately.

It is with shared vision and unyielding commitment that we offer our principles and values to the negotiators of the Tri-Party Agreement.

*PREAMBLE*

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# **CHAPTER 1**

## ***Principles for the Tri-Party Agreement Package***

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### **INTRODUCTION**

This chapter sets forth the principles that the Hanford Tank Waste Task Force developed to help guide the Tri-Party Agreement negotiations. Principles in this case are defined as values that should be applied to the overall agreement being negotiated, not just the Tank Waste Remediation System. These principles were developed in small group and plenary sessions and were approved by consensus of the Task Force at its final meeting on September 9.

The principles have been organized into the following four categories:

- I. The Tri-Party Agreement as a Whole
- II. The Agreement as a Management Vision and Tool
- III. The Agreement and its Effect on the Environment
- IV. The Timing of Actions in the Agreement

### **I. THE TRI-PARTY AGREEMENT AS A WHOLE**

The Tri-Party Agreement is in need of strengthening and improvement. The negotiations should identify and remedy those areas that need this strengthening and improvement. The resulting agreement should be enforceable, it should be legally binding, and it should contain milestones or other measures of accountability that are achievable and enforceable.

The U.S. Department of Energy should comply with all environmental laws. The Tri-Party Agreement should not be a shield against enforcement of other laws.

The Tri-Party Agreement should acknowledge and preserve existing treaty rights.

The Tri-Party Agreement, and the actions of the three parties, should increase meaningful public and tribal involvement in all key Tri-Party Agreement decisions with the public and tribes as a partner in the goals, scope, pace, and oversight of the cleanup. The process of involving a Site-Specific Advisory Board in ongoing oversight of the Agreement and of improving public involvement is essential to achievement of successful and satisfactory cleanup. The Tri-Party Agreement should explicitly incorporate a positive role and timelines for the establishment of a Site-Specific Advisory Board and should express support for its involvement in key decisions and oversight of timelines of the Agreement.

The Task Force expects that the renegotiated Tri-Party Agreement will be implemented. It is

an obligation of USDOE, and an obligation of the State of Washington and EPA to assist USDOE, to secure the necessary funds to achieve cleanup and priorities as renegotiated in the Tri-Party Agreement. Funds not expended because of the delay of some Tri-Party Agreement milestones during these negotiations should be used for the cleanup and not lost due to the delay caused by the negotiations.

Tri-Party Agreement milestones should be considered an obligation of the federal government. USDOE is bound to seek funding from Congress to meet the milestones. Milestones should provide methods of assessing performance that are meaningful, measurable, and understandable.

## **II. THE AGREEMENT AS A MANAGEMENT VISION AND TOOL**

The Tri-Party Agreement should accelerate the process of continuous improvement in the management and operation of the Hanford site. It is imperative that specific means and measures be developed that advance the changes needed to achieve effective cleanup of Hanford. In particular, two things stand out:

- The Hanford workforce should be fully informed of hazards and should have the freedom to speak without fear of retribution on safety and environmental concerns. Responsive mechanisms to make this possible should be created.
- The Hanford workforce should be empowered to participate in and contribute to the improvement of the cleanup's efficiency and accountability.

The future Site-Specific Advisory Board should be asked to give these issues attention.

The Agreement should incorporate the necessity of adequate training of the Hanford workforce, including subcontractors, so that cleanup can be accomplished safely, on time, and within budget. This training should include emergency response measures as well.

Emergency management that involves local communities, the tribes, and the states should be done in partnership.

The Agreement should promote a sense of partnership and cooperation and should encourage imagination to solve problems that arise because of regulatory complexity, jurisdictional problems, or technical difficulties and other barriers to progress.

The Agreement should establish a way to demonstrate accountability to the public for the expenditure of funds during the cleanup. This includes planning, year-to-year budgets, and actual expenditure of funds for specific projects or activities.

The Agreement should drive the use of the most practicable, timely, available technology, while leaving room for future innovation. The Agreement should establish a folio of technological options and cause strategic investment over time to support a limited number of promising options. The Agreement should not promote further research on unlikely options. When a better option becomes known through an open and credible systems design and R&D process, it should be incorporated. To both update the folio and to assess the

viability of options, a periodic technical review should be conducted that includes the Site-Specific Advisory Board, the public, and the Hanford workforce.

Once cleanup actions and associated milestones are established, the Tri-Party Agreement should direct the parties to implement programs in ways that contribute to the community's economic transition initiatives and mitigate adverse socioeconomic impacts.

### **III. THE AGREEMENT AND ITS EFFECT ON THE ENVIRONMENT**

The Agreement should reflect the following principles regarding the impact of cleanup on the environment:

- Minimize the use of land for waste management.
- Avoid contamination of uncontaminated land.
- Avoid further harm to cultural resources, natural resources, and the environment, especially critical habitat and groundwater.
- Protect the Columbia River: Stopping the actual and potential future contamination of the Columbia River and preventing the migration of contamination off-site should be a high priority.
- Do not depend on the dilution of effluent wastes to effect safe conditions in the environment or to avoid legal discharge limits.
- Accomplish conservation and reuse of resources (including reuse of contaminated resources which could potentially be classified as waste or an allowable effluent).
- Recognize the importance of preserving the biodiversity of the Hanford site and the Columbia River.
- Natural Resources Damage Assessments under CERCLA should be integrated in a timely manner with the accomplishment of appropriate Tri-Party Agreement milestones so as to minimize overall restoration costs.
- Preserve natural resource rights embodied in treaties, and enforce laws protecting natural and cultural resources.
- Include CERCLA-like risk assessments for natural and cultural resources in environmental restoration/waste management actions and all other site activities.

### **IV. THE TIMING OF ACTIONS WITHIN THE AGREEMENT**

The Agreement should demonstrate that the three agencies are getting on with the cleanup. Progress on substantive cleanup priorities should be reflected in the Agreement, not just procedural milestones. After reasonable study, the three parties should select simpler, less costly solutions and get on with cleanup.

The Agreement should enable the public, the agencies, and the workers to see the end of the cleanup, if not predict its exact date.





## **CHAPTER 2**

### ***Values***

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#### **INTRODUCTION**

The Hanford Tank Waste Task Force was charged with identifying values that its members hold relative to the Tank Waste Remediation System and to supply those values to the lead negotiators for USDOE, EPA, and Ecology as the three parties renegotiated aspects of the Tri-Party Agreement. This product reflects the values of the members of the Task Force. Members of the Task Force were chosen because they represent a broad cross-section of local and regional constituency groups with a strong interest in the success of Hanford's cleanup.

This Chapter presents a Summary of Task Force Values. The reader is also urged to consult Appendix F. This Appendix describes the process by which the Task Force learned about tank waste issues and then, as individuals and in small groups, identified key problems and values associated with the Tank Waste Remediation System. Task Force members believe that the problems they identified relative to tank waste ("Problem Statements" in the Appendix) are essential to understanding Task Force values because they ground the values in Hanford's current realities, and the values and Problem Statements should be reviewed in conjunction. Summaries of the members' Individual Perspectives and of their small group discussions are included in this Appendix as are the individual worksheets that Task Force members completed.

#### **SUMMARY**

##### **1. Broad, Overarching Issues**

- Protect the environment.
- Protect public/worker health and safety.
- "Get on with the cleanup" to achieve substantive progress in a timely manner.\*
- Use a systems design approach that keeps endpoints in mind as intermediate decisions are made.
- Establish management practices that ensure accountability, efficiency, and allocation of funds to high priority items.

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\* For elaboration on this value, see Specific Implementation-Related Values under *Timing*.

## 2. Specific Implementation-Related Values

### *Timing*

- "Get on with the cleanup" to achieve substantive progress in a timely manner. Get on with it reflects a sense of urgency of purpose and a desire to see the cleanup move forward productively as quickly as possible.
- An action is "getting on with it" when it:
  - 1) contributes to environmental remediation and waste containment, stabilization, storage, and disposal in safe form;
  - 2) demonstrates on the ground progress as quickly as possible. For Tank Waste Remediation System, this means addressing tank safety, characterizing tank waste, upgrading tank farms, and preparing waste for stabilization. For all parts of the cleanup, this includes progress in protecting the Columbia River and its natural and cultural resources, groundwater, and human health;
  - 3) empowers safe operations and worker participation in quality implementation;
  - 4) reduces paperwork, analytic, and decision-making redundancy; and
  - 5) is less costly than other options while still protective of the environment and public/worker health and safety.
- The sum total of actions taken to "get on with it" should:
  - 1) move all major facets of the cleanup forward and in the proper sequence;
  - 2) keep technical options open that have realistic, cost-effective chances to significantly improve waste management practices over the life of the cleanup and appropriately implement these options; and
  - 3) consider the ability to evaluate, expand upon, or change course based on technical and scientific advancement.

### *Management*

- Use a systems design approach that keeps endpoints in mind as intermediate decisions are made.
- Establish management practices that ensure accountability, efficiency, and allocation of funds to high priority items.

### *Tank Leaks*

- Characterization is highly important but not the only priority. There are immediate health and environmental risks that need to be addressed. Infrastructure upgrades are important. We need to make progress on all fronts at once.
- Double-shell tank capacity is important; simpler solutions are preferred.
- Address leaking tanks, and prevent additional leaks without further compounding future remediation efforts. It is important to recognize that preventing new leaks and taking action now (as described below) are two different issues.

- The Tank Waste Remediation System is, in part, designed to resolve tank leaks. There are available, more cost-effective solutions than extended pretreatment/vitrification studies: i.e., double-shell tank capacity ("no monuments" - use existing technology for new tanks) and, possibly, barriers.

#### *Technology*

- The high cost and uncertainty of high-tech pretreatment and R&D threatens funding for higher performance low-level waste form, vitrification, and cleanup.
- Use the most practicable, timely, available technology, while leaving room for future innovation. Keep a folio of technological options and make strategic investments over time to support a limited number of promising options. Give up further research on unlikely options. When a better option becomes known through an open and credible systems design and R&D process, be willing to adopt it.

#### *Waste Form and Storage*

- Put wastes in an environmentally-safe form, using retrievable waste forms when potential hazards from the waste may require future retrieval and when retrievability does not cause inordinate delays in getting on with cleanup.
- Let the ultimate best form for the waste drive decisions, not the size nor timing of a national repository.
- Accept the fact that interim storage, at least, of the waste in an environmentally-safe form will occur for some time at Hanford. Select a waste form that will ensure safe interim storage of this waste. In so doing, do not attract other sites' waste for disposal or long-term storage at Hanford.

#### *Transportation*

- Minimize transportation of radioactive and hazardous materials to and from the site to reduce the risks to the public and the environment; evaluate decisions in light of how much and what materials will be used in the course of the cleanup because of potential consequences for communities along the transportation corridor.
- Assume treatment of Hanford's waste will occur on site; it is not productive to study transportation of Hanford's waste off-site for treatment.

#### *Training*

- Training for everyone who will be on the site is critically important.



## ***Chapter 3***

### ***Process***

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#### **BACKGROUND**

Beginning in 1943, the Hanford site, a 560 square mile complex located in southeastern Washington State, was operated by the USDOE and its predecessor agencies for the production of nuclear materials for national defense programs. Activities occurring over nearly five decades created 61 million gallons of highly radioactive waste that is currently held in 177 underground storage tanks. By mid 1993, 68 of the 149 single-shell tanks were known or suspected to be leaking waste. None of the more modern 28 double-shell tanks were leaking.

In the late 1980's, the USDOE ended the production mission at Hanford and began to shift the site's mission toward management of its wastes and cleanup of the site. The ultimate goal of the cleanup mission is to protect public health and safety and to mitigate and remediate environmental damage from exposure to the contaminants at Hanford. In 1989, USDOE, the EPA, and Ecology signed the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement. This Agreement established milestones and a schedule for cleanup and restoration of the Hanford site over a 30-year period. A key component of the Agreement was a commitment to retrieve and treat the waste in the 28 double-shell tanks and to undertake a process that would lead to closure of the 149 single-shell tanks and final disposal of all tank waste.

In early 1993, USDOE completed a "rebaselining" study of the Hanford Tank Waste Remediation System (TWRS). Based on the results of this study, USDOE believed there was a strong technical rationale for restructuring TWRS. Among the reasons for the proposed restructuring was the emergence of potential imminent threats to safety and the environment posed by waste in a number of tanks. USDOE suggested changing the Agreement to address some of the single-shell tank waste in the near future rather than after the waste in the double-shell tanks had been treated. USDOE also proposed a delay in the start of vitrification plant construction, a milestone dated March, 1993.

Recognizing that its recommendations required changes in the provisions of the Tri-Party Agreement, USDOE asked the regulatory agencies, EPA and Ecology, to renegotiate the tank waste section of the Agreement. In March, 1993, EPA and Ecology agreed, expanding the issues under consideration to include environmental restoration and general administration of the Tri-Party Agreement. The three parties agreed to put the milestones in

the Agreement regarding construction of facilities to handle tank waste (a vitrification plant and additional grout vaults) on hold until September 30, when the negotiations were scheduled to be completed.

The entire renegotiation process was directed by the Senior Executive Committee, composed of the USDOE Richland Operations Office Site Manager, John Wagoner; the EPA Region 10 Administrator, initially Dana Rasmussen, subsequently Acting Administrator Jerry Emison; and the Director of Ecology, Mary Riveland. Day to day management was provided by a Policy Committee made up of the USDOE Richland Operations Office Deputy Site Manager, Phil Hamric; the EPA Director of the Hazardous Waste Program, Randy Smith; and the Assistant Director of Ecology's Waste Management Division, Dan Silver.

### **ORGANIZING THE TASK FORCE**

From the beginning of the renegotiation process, USDOE, EPA and Ecology considered public and tribal participation essential. The public, tribes, communities, and local governments felt a task force was an appropriate vehicle for public participation. The three agencies' experience with the Hanford Future Site Uses Working Group strongly influenced the three agencies. Convened by the three parties to provide guidance on overall site cleanup, the Future Site Uses Working Group was composed of representatives of governments and constituencies with a stake in the future of Hanford. During 1992, this group developed a range of options for future uses of the Hanford site, identifying cleanup scenarios based on those options. Although the new process was specifically related to tank waste issues and the renegotiation of the Tri-Party Agreement, the experience with the Working Group encouraged the Senior Executive Committee to make use of a similar group.

By April 1993, the independent facilitation team that conducted the Future Site Uses Working Group process was selected to organize and conduct the new process. Through interviews with the three parties and with representatives of a broad range of constituencies, the facilitation team developed a preliminary list of potential candidates for the Task Force. These individuals were asked what would make a process successful and to recommend other individuals for the facilitation team to consult or interview. The interviewees emphasized the need for the three agencies to commit to using the products of their process in the negotiation process.

The Senior Executive Committee met in mid-May to review, revise, and approve the proposed process, schedule, charter, and groundrules that had been prepared by the facilitation team. This new process was known as the Hanford Tank Waste Task Force. The Senior Executive Committee adopted a list of candidates to serve on the Task Force and authorized the facilitators to convene the Task Force. To coincide with the pace of the negotiations, the Task Force had until the end of September, 1993, to finish its work.

## **MEMBERSHIP OF THE TASK FORCE**

The USDOE Richland Operations Office Manager, the EPA Region 10 Administrator, and the Director of Ecology jointly issued invitations to the list of candidates to participate in the Hanford Tank Waste Task Force. Dr. Mark Drummond, President of Eastern Washington University, was invited to chair the group, as he had the Future Site Uses Working Group. The Hanford Tank Waste Task Force represented a broad range of parties and constituencies with an interest or stake in the success of the Tri-Party Agreement. The Task Force consisted of representatives of tribal, state, and local governments, agriculture, business and economic development, environment, interest groups focused on Hanford, labor, and public health. (A full list of the Task Force membership is included in the Acknowledgments.) About half of the members of the Task Force had also served on the Future Site Uses Working Group. There were 27 seats "at the table." Teams of two individuals could hold a single seat; this approach was intended to enable consistent representation at the table. Both members of each team could participate in Task Force and Subgroup meetings.

## **CHARTER OF THE TASK FORCE**

On May 27, Task Force members discussed a draft Charter that defined the purpose of the Task Force, the scope of its work, and the timeline for completing the group's charge. In the Charter, the Task Force was charged with developing values to be considered by the three parties as they evaluate specific options concerning the Tank Waste Remediation System and developing a finite set of principles for the overall Tri-Party Agreement package. Individual members of the Task Force were expected to bring their own sense of which values and principles were most important to be considered in the negotiations and to work cooperatively to develop a finite set of values and principles to be used by the negotiators.

In order to develop values and the relative importance of each value, all members of the Task Force would, together, give due consideration to the following factors: risk and safety, cost effectiveness, interim and residual environmental impacts throughout the site, technological feasibility and certainty, timing of implementation, duration of activity, and others as identified by the Task Force.

It was not necessary for the Task Force to develop a consensus on a single set of values and principles for consideration by the negotiators. However, the Task Force would strive to develop commonalities and convergences among sets of values and principles, if more than one set or range of values and principles emerged from the Task Force.

According to the Task Force Charter, the Task Force process was to be guided by the Chair and by the Task Force itself.

The simultaneous progress of Task Force discussions and the negotiations would allow the negotiators to incorporate the group's results into the negotiations. The negotiators would report on how the values and principles identified by the Task Force were influencing the negotiations and, where there were dilemmas or tough choices, ask for clarification of the

Task Force's values and the principles for the overall negotiation package. Because of the September 30, 1993, deadline for the conclusion of the negotiations, the Task Force process was designed to be completed within the same time frame.

The Task Force Charter was revised following the May 27 Task Force meeting and was approved at the group's next meeting, on June 16.

A set of groundrules that defined how the group would conduct its work also was drafted, reviewed by the Task Force on May 27, and approved at the June 16 Task Force meeting.

## **THE TASK FORCE PROCESS**

To be useful to the negotiations, the Task Force's work had to keep pace with the negotiations process. Therefore, the process designed by the facilitators called for four meetings of the full Task Force. Three Subgroup meetings were held to further the work of the Task Force as a whole. These meetings are summarized below.

### ***May 27 Task Force Meeting***

On May 27, 1993, the Hanford Tank Waste Task Force met for its first plenary session. During the introductory session, the Task Force members expressed their expectations of the process, reviewed the Charter defining the scope of their work, modified and adopted Groundrules to govern how they conducted their work, and set a schedule of meetings to complete their work by September 9. The three members of the Policy Committee (Phil Hamric, USDOE, Dan Silver, Ecology, and Randy Smith, EPA) explained the context within which the Task Force was being created, expressed the appreciation of the three agencies to Task Force members, and committed themselves to listen and to use the group's products in the negotiations. The Task Force was introduced to the lead negotiators from the three parties, who briefly explained what they hoped to get from the Task Force as they proceeded through the negotiations. The meeting also included a presentation entitled "A Tank Waste Primer" that was the first step in developing a common base of information. This presentation focused on the history of the tanks, their number, location, and contents. The "Primer" concluded with a brief description of the issues associated with the tank waste.

### ***June 3 Framework Subgroup Meeting***

On June 3, a Subgroup of the Task Force met to discuss a framework for understanding information on tank waste issues and to identify categories of needed information. The Subgroup, called the Framework Subgroup, asked that information on tank waste remediation be presented in six categories:

- Tank safety
- Tank leaks
- Managing tank waste
- Pretreatment
- Treatment
- Disposition of waste



These six categories were referred to as "steps" in the remediation process.

### ***June 16-17 Task Force Meeting***

At the plenary session on June 16, the Task Force further developed its common information base. Members heard presentations on Native American treaty rights in relation to Hanford, groundwater contamination, and each of the six topics identified at the June 3 Subgroup meeting. Each presentation was followed by commentary from a panel of experts and a brief question and answer period. At several points during the day, Task Force members worked in small groups to identify the biggest problems they felt needed to be resolved at each step in the remediation process.

On June 17, Task Force members worked individually, in groups of 2-3, and then in five small groups to identify and describe what each member considered to be the most important problem relative to tank waste and the values they held relative to the problem. Using a value/problem statement matrix worksheet, members also looked at linkages between their most important value and other facets of the framework. Each of the small groups reported the key themes from its discussion and members of the Task Force had an opportunity to ask clarifying questions and to offer comments. After this exercise, the negotiators described some of the ideas they would take from the Task Force meeting into upcoming negotiation sessions and identified areas where there were potential contradictions among the values. They also committed to reporting to the Task Force at its next meeting how the values were influencing the negotiations.

### ***June 24 Principles Subgroup Meeting***

To consolidate the work on values from the June 17 meeting, a subgroup called the Principles Subgroup met on June 24. This group reviewed and amended the consolidation of key values drafted by the facilitators. The Subgroup recommended that the summaries of the small group work from June 17 and the problem statements developed on June 16 be an integral part of the values product, to ground the values in Hanford's problems.

Following the subgroup's modifications and additions to the consolidated list of values, the facilitators prepared a draft Summary of Task Force Values and sent it to the negotiators and the Task Force.

The Principles Subgroup also considered how to pose the discussion of principles that would be part of the Task Force's product. Based on the Subgroup's work, the facilitators drafted a discussion paper for the principles discussion at the July 23 Task Force meeting.

### ***July 22-23 Task Force Meeting***

The Task Force next met in plenary session on July 22 and 23, 1993. During the first day, the Task Force heard from the negotiators on how the tank waste values product was influencing the negotiations. Technical panels and presentations on tank safety, management issues, and the role of grout in the disposition of tank waste expanded the common information base. The day concluded with a dialogue between the lead negotiators and the Task Force. Having reviewed the draft values product, the negotiators identified areas where

they needed more guidance on the Task Force's values. Following the meeting, Task Force members were invited to stay to talk informally with USDOE staff who were there to offer information on tank monitoring, emergency preparedness, and the Vortec melter system.

During the second day of the July meeting, the Task Force further developed the values relative to tank waste, authorized the facilitators to make revisions, and approved the revised values product. The Task Force also drafted a preamble to its Final Report.

The remainder of the meeting concentrated on developing principles to shape the overall Tri-Party Agreement package. The basis of discussion was the paper drafted by the facilitators following the Principles Subgroup meeting. The facilitators were authorized to revise the principles product based on the Task Force members' comments and to bring the revised draft to a meeting of the Principles Subgroup, which met on August 6 to further shape the principles product.

### ***August 6 Principles Subgroup Meeting***

The Principles Subgroup convened to review the revised Summary of Task Force Values and to continue development of principles for the overall Tri-Party Agreement package. The Subgroup agreed that the Values product should include both Broad, Overarching Issues in addition to the complementary Specific Implementation-Related Values. The Subgroup asked the facilitators to draft language for several points in consultation with individual Subgroup members.

The Subgroup also briefly revisited the Preamble to the Final Report, which the Task Force had written at the July 22-23 meeting.

### ***August Public Meetings***

Between August 16 and 24, public meetings, sponsored by the three agencies renegotiating the Tri-Party Agreement, were held in five locations in Washington and Oregon. The purpose of the meetings was threefold:

- To update interested citizens on the ongoing negotiations process, especially with regard to public values identified at previous meetings and through the Hanford Tank Waste Task Force process;
- To provide the public with an opportunity to identify and clarify public values;
- To provide guidance to the negotiators on issues where there is not yet agreement among the parties or where possible agreements may conflict with certain public values.

Two Task Force members attended each meeting and described the Task Force process. These meetings were the second opportunity for the public to offer ideas and comments to the negotiators. The first opportunity was in May, prior to the convening of the Task Force, when the three parties hosted public meetings at the same five locations in Washington and Oregon. At these meetings, citizens had an opportunity to learn about tank waste issues and to identify values and principles that should guide the negotiators.

***September 9 Task Force Meeting***

The first half of meeting was devoted to hearing from the negotiators. Each of the three negotiators explained how the values and principles products have affected the negotiations. After hearing from the negotiators, the Task Force broke into four small groups to discuss their impressions of the negotiators' status report and to formulate questions that they wanted the negotiators to respond to. Returning to plenary session, the Task Force heard reports from each group and the negotiators addressed the groups' questions. The negotiators then noted two key issues that they were having difficulty resolving.

During the second half of the meeting, the Task Force reviewed the draft Final Report section by section. The Task Force approved the amended report by consensus. The Task Force discussed future public involvement activities related to the Report and the renegotiation of the Tri-Party Agreement. Following expressions of appreciation by representatives of the three parties, the Chairman declared the Task Force adjourned.



## *Glossary*

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**Basin** - excavated lined area to hold fluids until they evaporate or until radioactive decay reduces their activities to levels permissible for release.

**Burial Ground** - land area specifically designated to receive contaminated waste packages and equipment, usually in unlined trenches covered with overburden.

**Byproduct Material** - 1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and 2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. (See also Low-level Waste.)

**Canister** - the primary metal envelope for remote-handled solid transuranic waste, high-level waste, or spent fuel. The canister affords physical containment for the waste, but is not primarily designed to provide shielding.

**Capsule** - stainless-steel cylinder used for containment of strontium or cesium recovered from radioactive wastes.

**Carbon Tetrachloride** - chlorinated organic solvent used in the plutonium extraction process at the Plutonium Finishing Plant. Known human liver carcinogen via inhalation and ingestion. Can damage the central nervous system.

**Cask** - a specially designed container used for shipping, storage, and/or disposal of radioactive material that affords protection from accidents and provides shielding for the radioactive material.

**CERCLA** - Comprehensive Environmental Response, Compensation, and Liability Act, also known as "Superfund;" this is a federal law that establishes the regulatory approach for cleanup of hazardous substances that could endanger human health or the environment.

**Cesium 137 (Cs-137)** - A gamma emitting radioisotope with a half-life of 30 years. Cesium 137 is generated during fission of uranium-235.

**Characterization** - a process for determining the chemical, physical, and radiological constituents of wastes.

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**Class A & B Waste** - Low-level radioactive wastes requiring institutional control for 100 years, after which they are assumed to have decayed to the point where they present an acceptable hazard to any intruder.

**Class C Waste** - Low-level radioactive wastes requiring isolation for 500 years, after which they are assumed to present an acceptable hazard to an intruder. Class C wastes must be stabilized prior to disposal.

**Cleanup** - environmental remediation and waste management activities required to remove, isolate, treat, stabilize, or contain contamination resulting from past practices in order to reduce associated risks.

**Contamination** - measured concentration of an undesirable chemical or radionuclide that is above the normal or background level.

**Decontamination and Decommissioning** - process of removing contamination from facilities or equipment by washing, chemical action, mechanical cleaning, or other techniques; then removing facility or equipment from operation; and entombing, dismantling and removing, or converting the facility for another use.

**Disposal** - the isolation of radioactive wastes from the biosphere inhabited by humans and containing their food chain by emplacement in a land disposal facility without maintenance and with no intent of retrieval, and requiring deliberate action to gain access after emplacement.

**DOE-RL** - Richland Operations Office of USDOE.

**Double-shell Tank** - reinforced concrete underground vessel with two inner steel liners to provide containment and backup containment of liquid wastes.

**Ecology** - Washington State Department of Ecology.

**EIS** - Environmental Impact Statement.

**Environmental Restoration** - cleanup and restoration of sites contaminated with hazardous substances during past production or disposal activities.

**EPA** - U.S. Environmental Protection Agency.

**Expedited Response Action** - given a more immediate threat to human health or the environment, old waste sites under CERCLA may be cleaned up more quickly by bypassing some interim reviews and paperwork. Final disposition of these sites is done via a CERCLA Record of Decision for the entire operable unit.

**Fission** - the splitting or breaking apart of a heavy atom such as uranium. When a uranium atom is split, large amounts of energy and one or more neutrons are released.

**Fuel** - fissionable material used as the source of power when placed in a criticality arrangement in a nuclear reactor.

**Groundwater** - a water-saturated region below the land surface.

**Grout** - a cementitious waste form which consists of mixing dry-blended materials with double-shell tank waste to a specific grout formulation, for near-surface disposal; it is used for waste fixation and immobilization.

**Hazardous Waste** - non-radioactive chemical toxins or otherwise potentially dangerous materials defined by RCRA.

**High-level Waste/High level Radioactive Waste (HLW)** - the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from such liquid waste that contains fission products in sufficient concentrations as to require permanent isolation. Includes also other highly radioactive material that the Nuclear Regulatory Commission determines by rule requires permanent isolation.

**Immobilization** - a process that prepares waste for disposal.

**Interim stabilization** - a process that removes liquid from a single-shell tank until less than 190,000 liters (50,000 gallons) of drainable interstitial liquid and less than 19,000 liters (5,000 gallons) of supernatant remain.

**Iodine 129 (I-129)** - beta emitting radioisotope with a half-life of 15,700,000 years. It is generated during the fission of uranium-235.

**K Basins** - basins in the K reactor area used for storage of spent fuel rods immersed in water. See "Basin."

**Low-level Waste (LLW)** - any radioactive waste not classified as high-level waste, transuranic waste, spent nuclear fuel, or byproduct material. (See also High-level Waste, Transuranic Waste, and Byproduct Material.)

**Mixed Waste** - waste that is both radioactive and hazardous.

**Monitored Retrievable Storage** - a concept for interim storage of waste or spent fuel. The waste would be continuously monitored and would be stored in such a way that it could be retrieved at a later date.

**National Environmental Policy Act** - established requirement for conducting

## GLOSSARY

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environmental reviews of Federal actions that may have a significant impact the environment.

**Nuclear Reactor** - device which sustains a chain of fission events that can be maintained and controlled to meet a particular purpose.

**Performance Assessment** - a systematic radiological analysis of the potential risks posed by waste management systems to the public and environment and a comparison of those risks to established performance objectives.

**Plume** - a distribution of contaminants a distance away from a point source in a medium like groundwater or soil; a defined area of contamination.

**Pretreatment** - Processing of waste stored in tanks to separate it into high-level and low-level waste fractions.

**Radioactive Half-life** - The time it takes for one half of the radioactive atoms present to decay. After seven half-lives, the activity will be less than 1% of the original activity.

**Radioactive Waste** - solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities. It does not include material contaminated by radionuclides from nuclear weapons testing.

**Radioactivity** - property of certain nuclides of emitting particles or electromagnetic radiation while undergoing nuclear transformations.

**RCRA** - Resource Conservation and Recovery Act: federal law regulating generation, transportation, treatment, storage, and disposal of hazardous wastes and remediation of waste sites currently in use.

**Record of Decision** - (ROD): (1) under CERCLA, the official document used to select the method of remedial action and cleanup goals to be implemented at a particular contaminated site; (2) under the National Environmental Policy Act (NEPA), the official document describing an agency's final choice among alternatives that have been the subject of study in an Environmental Impact Statement.

**Remediation** - removing or correcting a condition, such as by removing or isolating contaminated material.

**Repository** - a place for the permanent disposal of radioactive wastes in an engineered facility in an underground geologic formation.

**Retrieval** - removal of liquid and solid wastes from storage tanks.

**Single-shell Tank** - older Hanford high-level waste underground tank composed of a single



carbon steel liner surrounded by concrete.

**Spent Nuclear Fuel** - fuel elements withdrawn from a nuclear reactor following irradiation.

**Stabilization** - treatment of tank waste to protect the environment from contamination.

**Strontium 90** - heavy radioactive isotope of strontium that is hazardous because it can be assimilated by and deposited in the bones of organisms much like calcium. It is a beta emitter with a half life of 28.6 years. The primary source of strontium 90 attributable to Hanford entering the Columbia River has been the 100-N Area liquid waste disposal facilities, which are known to discharge to the river via groundwater seepage.

**Superfund** - see CERCLA.

**TPA** - Tri-Party Agreement.

**TWRS** - Tank Waste Remediation System

**Technetium 99 (Tc-99)** - A pure beta emitting radioisotope with a half-life of 212,000 years. Technetium 99 is generated during the fission of uranium-235.

**Transuranic (TRU) Waste** - waste containing radionuclides with an atomic number greater than that of uranium, with a half-life of more than 20 years, and in concentrations greater than 100 nanoCuries (nCi) per gram of waste. Typically, these wastes do not have much penetrating radiation, but they require isolation because they remain radioactive for a long time and are very damaging to internal tissue.

**Treatment** - an activity that alters the chemical or physical nature of hazardous or radioactive waste to reduce its toxicity, volume, and/or mobility.

**Tri-Party Agreement** [Hanford Federal Facility Agreement and Consent Order] - agreement signed in 1989 by USDOE, EPA, and Washington State Department of Ecology that identifies milestones for bringing Hanford into compliance with CERCLA/RCRA.

**Tritium** - radioactive isotope of hydrogen.

**Uranium** - heavy radioactive element naturally occurring in isotopes of U<sup>234</sup>, U<sup>235</sup>, and U<sup>238</sup>. Fuel for nuclear weapons.

**USDOE** - U.S. Department of Energy.

**Vadose Zone** - unsaturated region of soil between the ground surface and the water table.

## **GLOSSARY**

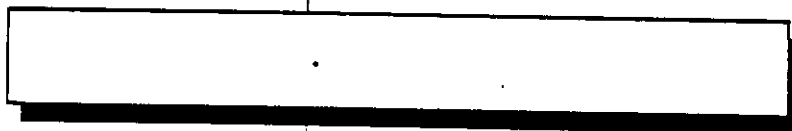
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**Vault** - type of structure constructed out of concrete to store a variety of nuclear materials.

**Vitrification** - method of immobilizing radioactive waste for eventual disposal in a geologic repository; involves adding frit and waste to a joule-heated vessel and melting it into a glass that is then poured into a canister.

**Waste Management** - activities involving the short-term or long-term storage or isolation of existing or newly-generated wastes, treatment, and final disposal of wastes.

# Appendices



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## *Appendix A*

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#### **A. Background**

The Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) specifies how the goal of mitigating and remediating environmental damage from contaminants at Hanford this goal will be met. Milestones in the Agreement regarding construction of facilities to handle tank waste (a vitrification plant and additional grout vaults) have been put on hold until September 30, when the negotiations are scheduled to be completed. The ultimate goal of the cleanup at Hanford is to protect health and safety and to mitigate and remediate environmental damage from contaminants at Hanford.

Three major aspects of the Tri-Party Agreement are being negotiated in 1993, the Tank Waste Remediation System, environmental restoration, and the administration and functioning of the Tri-Party Agreement itself. While all three topics are critical to a successful negotiated outcome, the Task Force will focus on issues related to the Tank Waste Remediation System.\*

The three signatories to the Tri-Party Agreement (the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology) want to conduct their negotiations with knowledge of the range of perspectives held by the public on accomplishing the Hanford cleanup under a renegotiated Agreement. In particular, the three parties have an interest in understanding the values held by the public regarding the operation of the Tank Waste Remediation System. They also have an interest in understanding the principles the public wants to be considered as the negotiators consider potential tradeoffs between the Tank Waste Remediation System and other aspects of the Tri-Party Agreement.

The Tank Waste Task Force has been formed to assist the three parties in receiving and understanding the values and principles described above.

#### **B. Purpose**

The purpose of the Tank Waste Task Force is to be a representative cross-section of those who have vital interest in the Tri-Party Agreement and the Tank Waste Remediation System. The Task Force will provide advice to the three signatories to the Tri-Party Agreement on values and principles to help structure and illuminate the negotiations.

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\* The Tank Waste Remediation System involves the following basic functions: to manage tank waste; process tank waste; transfer waste and facilities. "Managing tank waste" means to accomplish these tasks: store waste; transfer waste; characterize, survey and monitor waste; restore and upgrade systems; and manage the tank waste system program.

## APPENDIX A

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The Tri-Party signatories will use the Task Force as one venue for displaying and discussing an array of Tank Waste Remediation System alternatives. The Tri-Party signatories will carry the work of the Task Force into their negotiations and will inform the Task Force of how each alternative is assessed relative to the values identified by the Task Force. The Task Force will identify principles to be considered by the negotiators when discussing potential tradeoffs between the Tank Waste Remediation System and other aspects of the Tri-Party Agreement. The negotiators will use the principles to assess tradeoffs. Finally, the negotiators will inform the Tank Waste Task Force of how the outcome of the negotiations has been affected by and reflects the values and principles identified by the Task Force.

### C. Scope

The Tank Waste Task Force is charged with: 1) developing a finite set of values to be considered by the three parties as they evaluate specific options concerning the Tank Waste Remediation System, including the relative importance of each value; and 2) developing a finite set of principles for assessing the tradeoffs that may occur between other aspects of the negotiations and the Tank Waste Remediation System.

Individual members of the Task Force are expected to bring their own sense of which values and principles are most important to be considered in the negotiations and to work cooperatively to develop a finite set of values and principles to be used by the negotiators.

In order to develop values and the relative importance of each value, all members of the Task Force will, together, give due consideration to the following:

- risk and safety
- cost effectiveness
- interim and residual environmental impacts throughout the site
- technological feasibility and certainty
- timing of implementation
- duration of activity
- others as identified by the Task Force

In order to develop principles to consider when evaluating tradeoffs, all members of the Task Force will, together, give due consideration to the following:

- areas and resources to be protected
- certainty that cleanup will be accomplished
- ability for other uses of parts of the site to become possible
- ability for other entities to manage land and resources
- stability of funding over the life of the cleanup
- others as identified by the Task Force

The three parties commit to providing requested information and documents related to the work of the Task Force on a timely basis.

#### **D. Stipulations**

1. The Task Force will operate independently of the three parties and the negotiations. It will endeavor to complete its work in a timely fashion in light of the pace of the negotiations and in a manner that is most useful to the negotiators.

All programmatic direction will be given to the Task Force by the Chair of the Task Force and by the Task Force itself. An independent contractor selected by the three signatories will facilitate the Task Force. The three signatories will establish a policy committee to communicate with the Chair through the facilitators about the proposed direction of the Task Force.

2. It is not necessary for the Task Force to develop a consensus on a single set of values and principles for consideration by the negotiators. However, the Task Force will strive to develop commonalities and convergences among sets of values and principles, if more than one set or range of values and principles emerges from the Task Force.
3. The negotiators will
  - share with the Task Force an array of the technical options or alternatives for Tank Waste Remediation System to be considered during the negotiations;
  - evaluate all options in light of the values developed by the Task Force;
  - report back on the results of this evaluation individually;
  - provide information regarding potential trade-offs, if any for use by the Task Force in developing principles;
  - provide feedback on how the values and principles were used or applied during the negotiations.

The Task Force is not intended to focus on specific technical aspects of any option or alternative, nor to provide specific recommendations on the technical merits, or lack thereof, of any specific option or alternative. However, the Task force may choose to explore specific technical aspects of options or alternatives against values. Similarly, the Task Force may choose to discuss the technical merits of options or alternatives. However, detailed examination of techniques and merits will not become the focus of the Task Force.

4. The Task Force process is not intended to cover all issues arising in the negotiations of the Tri-Party Agreement. Questions of relevance will be determined in light of this Charter.

## ***APPENDIX A***

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## ***Appendix B***

### ***Groundrules***

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The purpose of these groundrules is to make explicit the common expectations with which the participants enter the process. They describe the purpose of the process, the manner in which the several governments and interests are structured for effective participation, the responsibilities of the participants to one another and to their constituents, the spirit in which they will participate in the process and the responsibility of the facilitators to facilitate the process. The intent of these groundrules is to provide a framework for fruitful discussion and exchange that guides rather than constrains interaction.

Participating in the facilitation process signals an understanding and acceptance of the groundrules. The groundrules may be amended by consensus of the Task Force.

#### **A. Purpose**

The purpose of this Task Force is to inform Task Force participants about the nature and progress of tank waste negotiations, to enable the participants to provide focused input into the negotiations regarding values held by the public that could be used in evaluating tank waste management alternatives, and to consider principles to guide any potential tradeoffs between tank waste issues and other aspects of the Tri-Party Agreement. The Task Force will be open to the commonalities of their respective views and will seek to identify convergences of opinion and values which may result from them.

#### **B. Roles and Responsibilities of Task Force Participants**

- Participants will concur in the desirability of exploring a range of issues related to the Hanford Tank Wastes and the negotiations related to Tank Wastes. Participants also concur that the Task Force's process cannot cover and is not intended to cover all issues arising in the negotiation of the Tri-Party Agreement. Participants agree that the Chair shall be empowered to make decisions on the relevance of issues proposed for the Task Force after discussion with the Task Force.
- Participants will fully explore issues, recognizing time limitations and size of the Task Force.
- Participants commit to search for opportunities and creative solutions.
- All participants in the Task Force will seek to clearly articulate their concerns and goals regarding the issues.

## **APPENDIX B**

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- All participants recognize the legitimacy of the concerns and goals of others.
- All participants will refrain from personal attacks and characterizations during meetings of the Task Force and subgroups.
- Participants will enter into a dialogue that includes listening carefully, asking questions, and educating others regarding needs. The atmosphere will be problem solving, rather than stating positions.

### **C. Role and responsibilities of the Chair**

- The Chair shall be in charge of the floor.
- The Chair shall be empowered to make decisions on the relevance of issues proposed for the Task Force after discussion with the Task Force.
- The Chair and the facilitators shall be the designated spokespersons for the process and its progress.

### **D. Role and responsibilities of the facilitators**

- The facilitators are impartial individuals who guide the process, including facilitating Task Force and subgroup meetings.
- The responsibility of the facilitators is to keep the group focused on the agreed-upon task, to suggest alternative methods and procedures, and to encourage participation by all group members.
- The facilitators assist in the preparation of agendas, prepare meeting summaries, coordinate meeting logistics, and draft products and reports of the Task Force.

### **E. Role of the Negotiators**

- The negotiators are to hear what the Task Force is recommending that is important for the negotiators to consider, to ask clarifying questions about those values and principles, and would be expected to share any other principles that are emerging in the negotiations.
- The negotiators will inform the Tank Waste Task Force of how the outcome of the negotiations has been affected by and reflects the values and principles identified by the Task Force.
- The negotiators will share any relevant information that emerges during the course of the negotiations.

**F. Independence**

All programmatic direction to the Task Force will be given by the Task Force and an independent chair. The facilitation team for the project will operate independently to serve the Task Force process. In the spirit of this independence, the facilitation team will:

- work with an independent chair to determine agendas,
- draw upon and acquire the services of independent technical experts, within the resources available,
- draft all written reports of the Task Force.

Westinghouse-Hanford Company will be responsible only for ensuring the logistical arrangements for the process and fiduciary accountability.

**G. Meeting content**

- Meetings will be task oriented with specific agendas. Agendas will describe the matter for discussion, the purpose of the discussion and provide such other information necessary to support informed discussion.
- A draft agenda for the next session will be developed at the conclusion of each session. A copy of the draft agenda will be mailed to Task Force members at least seven days prior to the session.

**H. Communication during process**

- The Chair and the facilitators shall be the designated spokespersons for the process and its progress.
- All of the individuals who are participating in the Task Force accept the responsibility to keep their associates and constituency groups informed of the progress of the discussions and to seek advice and comments.
- A joint statement suitable for discussion with the media will be agreed to at the end of each joint meeting. When responding to the media, participants and facilitators shall respond within the spirit of the media statement agreed to at the conclusion of each session.
- Participants will not characterize the motivations or values of any other participant or group in any discussions they have with the media.
- Participants agree that they will try to work out their differences at the table instead of in the media.

## **APPENDIX B**

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- The three parties commit to providing requested information and documents related to the work by the Task Force on a timely basis.

### **I. Internal Decision-Making**

- Consensus is defined as agreement of all participants, and will be the method of determining Task Force agreement on issues. If needed, more formal procedures for decision-making would occur with the concurrence of the Task Force.
- In the absence of consensus, the Task Force will report different perspectives held on the issue.
- Disagreements will not be presented in terms of the members for or against.
- There will be a single report encompassing both issues on which there is agreement and issues on which there are differing perspectives. All reports will be reviewed and approved by the Task Force.

### **J. Subgroups**

- Composition of subgroups, if established, will be balanced among the interests represented on the Task Force. The charge of the subgroups will be limited in scope and defined by the Task Force and may include refining issues, searching for data, identifying relevant experts and possibly presenting options for the Task Force to consider. The subgroups will not decide or recommend on behalf of the full Task Force.

### **K. Teams and Observers**

- Consistency at the table for the Hanford Tank Waste Task Force is critical and an identified number of seats have been allocated for each participating government, agency, and interest group/constituency. Only one person can sit "at the table" for each seat. In the absence of a single person who can commit to attending all Task Force meetings, a single seat at the table may be held by a "team" of two people. Both members of the team will be able to represent the participating government, agency, or interest group. Both members of each team can participate in Task Force and Subgroup Meetings.
- Meetings of the Task Force will be open to the public and the media.
- Observers will sit in chairs provided for observers, not at the table. At each meeting, a brief comment period will allow observers to offer comments related to issues at hand, subject to time limits as determined by the Chair.

**L. Products**

- The final report of the process shall be approved by the Task Force.
- The goal of the process is to develop a finite set of values to be considered by the three parties as they evaluate specific alternatives concerning the Tank Waste Remediation System, and to develop principles for assessing the tradeoffs that may occur between other aspects of the negotiation and the Tank Waste Remediation System.

**APPENDIX B**

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## Appendix C

### Letter of Commitment

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STATE OF WASHINGTON

OFFICE OF THE GOVERNOR

P.O. Box 40002 • Olympia, Washington 98504-0002 • (206) 753-6780

June 16, 1993

Dear :

Thank you for agreeing to serve on the Hanford Tank Waste Task Force. Your work will profoundly affect the region's future. Hanford has played a critical role in the nation's defense and the region's economy. We now face the expensive and unglamorous task of removing wastes and residual long-term threats to public health and the environment.

The Hanford Tri-Party Agreement provides a solid framework to move ahead. However, as we gain experience and knowledge, and as the nation confronts continuing budget deficits, we know we must explore changes and improvements to the Agreement and its schedules.

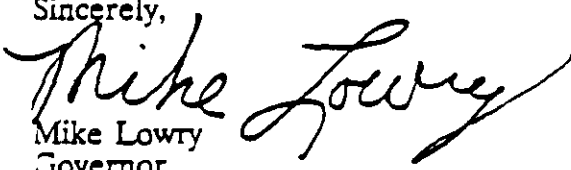
Energy Secretary O'Leary and I agreed to consider several significant changes to the Tri-Party Agreement. Along with the Environmental Protection Agency, we're sending our negotiators to the table. We all agree they must be guided by values that broadly represent the interested parties in the Northwest. Negotiated changes must be understood and accepted by the public.

In the next few months, you will be clarifying values, pushing the negotiators and experts for clear and focused answers to your questions and concerns, and helping explain issues to the public at large. We are counting on you to play this vital role.

I cannot stress too much the importance of maintaining the integrity of a mutually-supported, enforceable cleanup agreement, with committed actions and milestones. This is not only necessary to protect public health and the environment, it will also enable the Hanford site and its people to continue and expand their positive contribution to our region.

You have taken on a very tough task. As you work with other Task Force members, know that the people of Washington appreciate what you're doing and want your group to succeed. I have directed Ecology and other state agencies to be attentive, responsive and supportive to you in your work. I will follow your deliberations with great interest.

Sincerely,

  
Mike Lowry  
Governor





## ***Appendix D***

### ***Common Base of Information: Presenters and Topics***

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**May 27, 1993:**

**Panel: "A Tank Waste Primer"**

Ron Gerton (USDOE Tank Farm Manager), Don Provost. (WA St. Ecology),  
Ralph Patt. (Oregon Dept. of Water Resources)

**June 16, 1993:**

**Presentation: "Native American Treaty Rights"**

Prof. Ralph Johnson, of the University of Washington Law School

**Presentation: "Groundwater Contamination at the Hanford Site"**

Ralph Patt, hydrogeologist for Oregon Dept. of Water Resources' Hydrogeologist

**Presentations: "Tank Safety," "Tank Leaks," "Characterization," and  
"Transfer of Waste"**

Ron Gerton, USDOE Tank Farm Manager

**Presentation: "Waste Retrieval" and "Pretreatment"**

Leif Erickson, USDOE

**Presentation: "Treatment of Tank Waste"**

Toby Michelena, Washington State Dept. of Ecology

**Presentation: "Disposition of Waste"**

Harry Harmon, Westinghouse-Hanford Company

*Commentary for the above presentations on tank waste issues was provided by*

- Michael Gordon, Washington State Dept. of Ecology.
- Doug Sherwood, EPA, and
- Prof. Robert Catlin of the Univ. of Texas at Houston and the National Academy of Sciences panel on tank safety.

**July 22, 1993:**

**Panel on "Tank Safety"**

- Sonja Anderson, B.S. in chemistry and 7 years at Hanford
- Dr. David Campbell, a member of USDOE's High-Level Tank Advisory Panel
- Ron Gerton, USDOE Tank Farm Manager at Hanford

**Panel: "The Role of Grout in the Disposition of Tank Waste"**

- George Sanders, USDOE
- Todd Martin, Hanford Education Action League
- Toby Michelena, Washington State Dept. of Ecology

**Panel: "Management Issues at Hanford"**

- Tom Perry, GAO
- Terry Lash, consultant
- Randy Smith, EPA
- Dan Silver, Ecology
- John Wagoner, Hanford Site Manager, USDOE

## ***Appendix E- Meeting Summaries***

### **SUMMARY STATEMENT: HANFORD TANK WASTE TASK FORCE**

May 27, 1993 8:30 a.m. - 4:30 p.m.  
Pasco Red Lion, Pasco, WA

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The Hanford Tank Waste Task Force held its first meeting at the Pasco Red Lion on May 27, 1993 from 8:45 am to 4:30 pm. The Task Force was convened by the U.S. Department of Energy (USDOE), the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) to assist in planning crucial aspects of Hanford's cleanup. Members of the Task Force represent tribal, state, and local governments, advisory groups from Washington and Oregon, public health, agriculture, economic development/business interests, environmental groups, labor and interest groups related to Hanford.

The meeting was convened by the Chair, Mark Drummond, President of Eastern Washington University, who welcomed participants and offered his perspective on the tasks and challenges facing the Task Force. Members of the Task Force briefly introduced themselves and the constituencies they represent and indicated the interests and concerns they bring to the table.

Remarks were then offered by Phil Hamric, Deputy Manager of USDOE's Richland operations, by Dan Silver, Assistant Director for Hazardous and Solid Waste for the State of Washington, and by Randy Smith, Director of the Hazardous Waste Division for EPA's Region X. They explained the context within which the Task Force was being created; expressed the appreciation of their respective agencies to Task Force members; and expressed their commitment to listen to and to use the products developed by the Task Force in the current renegotiations of the Tri-Party Agreement.

The Task Force then reviewed and discussed the suggested process, the draft charter and draft ground rules. Revised copies of the charter and groundrules will be sent out for final review and comments to the Task Force in advance of the next meeting. A subgroup will work with the facilitators at a meeting on Thursday, June 3 at the Pasco Red Lion to develop a framework for understanding alternatives to address tank waste.

After lunch, the Task Force heard presentations on the history, current status and issues of concern related to tank waste. Presenters included Ron Gerton, Director for USDOE of Hanford's Tank Waste Storage Division, Don Provost, consultant to the Washington State Dept. of Ecology, and Ralph Patt, hydrogeologist for Oregon's Water Resources Dept. Members of the Task Force then had an opportunity to ask questions about the tank waste system and related issues.

## **APPENDIX E**

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Following a break, the lead negotiators for each of the three parties in the current Tri-Party Negotiations were introduced. They were Jim Bauer for USDOE, George Hofer for EPA, and Roger Stanley for Washington State. They explained briefly what they hoped to get from the Task Force as they proceed through the negotiations and responded to questions from Task Force members.

The agenda for the Task Force's next meeting on Wednesday and Thursday, June 16-17 at the Shilo Rivershore, was discussed. A summary statement of the meeting was read. The meeting adjourned at 4:30 pm.

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**SUMMARY STATEMENT:  
HANFORD TANK WASTE TASK FORCE**

June 16, 1993, 9:00 am - 7:40 pm  
Shilo Inn - Rivershore, Richland, WA

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The Hanford Tank Waste Task Force held its second meeting at the Shilo Inn - Rivershore in Richland, WA on June 16 and 17, 1993.

The meeting on June 16 was convened at 9:00 am by the Chair, Mark Drummond, President of Eastern Washington University, who welcomed participants. Task Force members introduced themselves. Mr. Drummond indicated that the purpose of the two-day meeting was twofold: to provide a common information base to the Task Force regarding the tank waste system and to provide the negotiators with values to use in considering tank waste options.

The facilitators briefly reviewed the agenda and process for the meeting. Task Force members were asked for comments on the draft summary of the May 27 Task Force meeting. As there were no comments, the summary was approved. The changes to the Charter and Groundrules were reviewed and, as amended, were approved.

The Task Force then heard two presentations on site-wide issues that are related to the ultimate disposition of tank waste. Prof. Ralph Johnson of the University of Washington Law School spoke about Native American treaty rights as they relate to the Hanford site. Ralph Patt, hydrogeologist for the State of Oregon's Water Resources Dept., provided information about groundwater issues at Hanford. Members of the Task Force had an opportunity to ask questions and offer comments.

The remainder of the meeting was devoted to further developing a common information base about tank waste issues. A framework for understanding the issues, prepared by the facilitation team in consultation with the Framework Subgroup, was described. It identified the following steps in addressing tank waste: tank safety; tank leaks; managing the waste; pretreatment; treatment; and disposition of the waste. For each stage in the framework, there was a presentation with commentary by a panel of experts and an opportunity for Task Force members to ask questions. Presenters included Ron Gerton, USDOE, Leif Erickson, USDOE, Toby Michelena of Washington State Dept. of Ecology, and Harry Harmon of Westinghouse-Hanford Company. Panel participants included Robert Catlin, University of Texas at Houston and Academy of Sciences panel member; Mike Gordon of the Washington State Dept. of Ecology, and Doug Sherwood, of EPA.

Task Force members also worked in a series of small groups to develop statements that identified the biggest problems to be resolved at each step in the process of addressing the tank waste. After dinner, the facilitators briefly explained how, overnight, they

## ***APPENDIX E***

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would consolidate the work done in the small groups and described the process that will bridge between the problem statements developed during the first day of the meeting and the values work to be done on the second day.

Mark Drummond expressed his appreciation to the Task Force for the members' hard work through a long day and reminded them of the 8:00 am start time for Thursday's Task Force meeting. He adjourned the meeting at 7:40 pm.

**SUMMARY STATEMENT:  
HANFORD TANK WASTE TASK FORCE**

June 17, 1993, 8:00 am - 2:40 pm  
Shilo Inn - Rivershore, Richland, WA

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The Hanford Tank Waste Task Force met on June 17, 1993, at 8:00 am at the Shilo Inn - Rivershore in Richland, WA for the second day of a two-day meeting.

The Chair, Mark Drummond, convened the meeting and invited Task Force members to introduce themselves and to comment on the work of the Task Force to date.

The facilitators then reviewed the agenda and process for that would be used for identifying and describing their values relative to different aspects of tank waste issues. Task Force members worked first individually, then in groups of 2 and 3, and finally in five small groups. The purpose of this work was for Task Force members to identify what they each consider to be the most important problem to be solved relative to tank waste and the values they hold relative to the problem. They also looked at linkages to other facets of the framework. Each of the five small groups reported the key themes from its discussions and members of the Task Force had an opportunity to ask clarifying questions and to comment.

It was agreed that the issue of tank safety would be considered further at the July Task Force meeting before the Task Force would identify values relative to tank safety. It was also agreed that management issues would be addressed at the July meeting.

It was noted that the Principles Subgroup will meet at the Pasco Red Lion on Thursday, June 24, 1993 from 9:00 am to 4:00 pm.

Following lunch, the lead negotiators, Jim Bauer for USDOE, George Hofer for EPA and Max Power on behalf of Roger Stanley, Washington State Dept. of Ecology, spoke briefly about the ideas they were taking away from the work the Task Force had done to date. They each complimented the Task Force for its hard work during the two-day meeting. Task Force members then asked questions of the negotiators and offered comments and concerns.

The agenda for the July 22-23 Task Force meeting at the Tower Inn was described. Members who will need overnight accommodations were urged to make reservations as early as possible.

A summary of the two-day meeting was read. The meeting adjourned at 2:40 pm.

**SUMMARY STATEMENT:  
HANFORD TANK WASTE TASK FORCE**

July 22, 1993, 9:00 AM - 6:16 PM  
Tower Inn, Richland, WA

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The Hanford Tank Waste Task Force met for the first day of a two-day meeting at the Tower Inn in Richland on Thursday, July 22, 1993. The meeting was convened at 9:00 AM by the Task Force Chair, Mark Drummond.

The purpose of the meeting was to hear a report from the negotiators on how the tank waste values product is influencing the negotiations; to further develop a common base of information related to tank safety, management issues, and the role of grout in the disposition of tank waste; and to identify principles for the overall Tri-Party Agreement package.

Following a review of the process for the two-day meeting and the day's agenda, there was a report from each of the lead negotiators for the three parties: George Hofer for EPA, Roger Stanley for the Washington State Dept. of Ecology, and Jim Bauer for USDOE. The Task Force had an opportunity to ask questions about the way the Task Force's values are being used in the negotiations.

A panel on tank safety issues was convened after a break. Panel participants included Sonja Anderson, who has a B.S. in chemistry and broad experience in process chemistry/chemical engineering over the past 25 years. Dr. David Campbell, a member of USDOE's High-Level Tank Advisory Panel, and Ron Gerton, USDOE Tank Farm Manager at Hanford. The Task Force asked questions of the presenters.

After lunch, there was a brief discussion of definitions of categories of waste and a panel to discuss the role of grout in the disposition of tank waste. Panel participants were George Sanders, USDOE Grout Branch Manager, Todd Martin of the Hanford Education Action League, and Toby Michelena, Technology Assessment Unit Supervisor for the Washington State Dept. of Ecology.

This was followed by a panel on management issues. Presenters included Tom Perry of the General Accounting Office, Dr. Terry Lash, an independent management consultant, Randy Smith of EPA, Dan Silver of Ecology, and John Wagoner, USDOE Manager of the Hanford site. The presenters focused on issues they felt should be addressed to ensure a successful cleanup of the site.

The negotiators and members of the Task Force then identified a list of dilemmas or "big ticket" items in the negotiations for Task Force members to discuss on the second day of the meeting and to clarify their values for the negotiators.



A discussion paper on principles for the Tri-Party Agreement was distributed to the Task Force. The paper was prepared by the facilitation team in consultation with the Principles Subgroup which met on June 24. It was to be the basis for the discussion of principles for the package on the second day of the meeting.

Task Force members were invited to stay after the close of the meeting for an informal informational session offered by the Dept. of Energy. Topics for additional information included monitoring, emergency preparedness, and the vortex melter system.

The meeting adjourned at 6:15 PM.

**SUMMARY STATEMENT:  
HANFORD TANK WASTE TASK FORCE**

July 23, 1993, 8:30 AM - 4:00 PM  
Tower Inn, Richland, WA

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The Hanford Tank Waste Task Force met for the second day of a two-day meeting on Friday, July 23, 1993. The Chair convened the meeting at 8:45 AM. The purpose of the meeting was to further develop the values product and to identify principles for the overall Tri-Party Agreement package. He reviewed the groundrules for decision-making. Following a brief discussion, it was agreed that Hanford Watch and Columbia River United would have separate seats at the table rather than sharing a seat as a team.

After the process for the day and the agenda were reviewed, the Task Force had a discussion of 4 key issues from the preceding day's work: "getting on it", technological development, the character of the waste, and transportation. It was agreed that language relative to these issues as well as a preamble for the group's work would be drafted and reviewed by the Task Force.

After lunch, the Task Force reviewed and revised the draft language and the preamble drafted by a subgroup of the Task Force. The Task Force approved the values product by consensus.

The Task Force then turned to a discussion of principles for the overall Tri-Party Agreement package, using a discussion paper prepared by the facilitation team in consultation with the Principles Subgroup.

The Task Force reviewed and revised the language in the document. It was agreed that a subgroup would meet on August 6 at the Pasco Red Lion at 9:00 AM to further develop the principles for the package. All Task Force members were invited to participate at the meeting or to call the facilitators with their comments.

Topics for the September 9 agenda were identified. The Draft Report outline was reviewed. It was agreed the negotiators would identify issues where they need additional clarification in advance of the September 9 meeting so the Task Force would come prepared to discuss them.

There was a brief discussion of five public meetings on the negotiations scheduled between August 16 and 24th in Washington and Oregon and the role of Task Force members at those meetings. A question was raised about scheduling a tour of the tank farms. It was agreed the Dept. of Energy would work with the interested parties to schedule the tour.

The meeting adjourned at 3:55 PM.

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**SUMMARY STATEMENT:  
HANFORD TANK WASTE TASK FORCE**

September 9, 1993, 9:00 AM - 5:00 PM  
Tower Inn, Richland, WA

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The Hanford Tank Waste Task Force met on Thursday, September 9, 1993, at the Tower Inn in Richland. Mark Drummond, the Chair of the Task Force, convened the meeting at 9:00 AM. The purpose of the meeting was to hear a report from the negotiators on how the Task Force values and principles products are influencing the negotiations, to complete the Task Force report, and to conclude the work of the Task Force.

After the process for the day and the agenda were reviewed, the lead negotiators for USDOE, EPA, and Washington State Department of Ecology gave a report on the status of the negotiations and how the Task Force's values and principles were influencing the negotiations. George Hofer of EPA reported on tentative agreements in the area of environmental restoration; Jim Bauer of USDOE described tentative agreements regarding administration of the Tri-Party Agreement; and Roger Stanley of Ecology reported on tentative agreements in the Tank Waste Remediation System as well as areas where agreement had not yet been reached.

At the end of the presentations, Task Force members had an opportunity to review a handout prepared by the facilitation team that described tentative agreements that had been made by the negotiators in relation to the Task Force's values and principles. The Task Force then broke into four small groups to discuss their impressions of the negotiators' status report and to identify key questions they wanted the negotiators to respond to. At the conclusion of the small groups, a representative from each group reported on the comments, issues, and questions that were raised in their respective groups. The negotiators then responded to those questions.

Steve Cowan of USDOE Headquarters and Jeff Breckel of the State of Washington posed two key issues facing the negotiators:

- 1) whether the negotiations should strive to move forward on all fronts at once or should focus and prioritize; and
  - 2) how the negotiators should think about tradeoffs in light of budget constraints.
- Task Force members were asked to think about these issues over lunch for discussion in the afternoon.

Before the Task Force adjourned for lunch, Phil Hamric announced that he would be leaving Hanford to become site manager at Fernald near Cincinnati, Ohio, and that this would be his last meeting with the Task Force. After introducing his replacement, Ron Izatt, he expressed his appreciation to the Task Force for the time, effort, and contributions its members had made to the negotiations the three parties were engaged in.

## **APPENDIX E**

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Dan Silver of Ecology paid tribute to Mr. Hamric for the role Mr. Hamric had played in changing the relationship between USDOE and the State of Washington and said that Mr. Hamric would be missed. While noting that these had been "good-faith" negotiations, he cautioned that there might not be an agreement, and if one is achieved, it would not be possible to produce an agreement that would include all that Task Force members would like.

After lunch, Task Force members had an opportunity to offer their perspectives on the key issues the negotiators were facing. The Task Force then reviewed and revised the draft Report section by section. The Task Force approved the amended Report by consensus. It was agreed that the facilitators would revise the draft and send a final draft to the Task Force for review. After receiving the revised Draft, Task Force members will have two days to call in their comments prior to the Report's being finalized.

The Task Force then discussed several issues related to future public involvement. It was agreed that the facilitators would check on dates for future public involvement meetings on the draft Agreement and would select a date in advance of those meetings for the Task Force to reconvene, probably in mid October. There was also a discussion of efforts that the Dr. Drummond would undertake to publicize the Task Force's work when the Report is issued in the latter part of September.

Following a break, Site Manager John Wagoner expressed his appreciation to the Task Force for its hard work, for its useful and cogent thoughts and ideas, and for the values and principles provided to the negotiators. He committed to reporting to the Task Force at the end of the negotiations on how the three parties used the Task Force's advice.

George Hofer, speaking for EPA, expressed his agreement with Mr. Wagoner's remarks and indicated that the Task Force had given the negotiators courage and heart to make hard choices and significant changes in direction in their negotiations.

Dan Silver, speaking for Ecology, also expressed his appreciation and said that Ecology looked forward to continued public participation. The Task Force's Report, he said, would be a foundation for the future Site Specific Advisory Board.

The facilitators then thanked the Task Force and the numerous individuals who gave so much of their time and energy to the process. Finally, Dr. Drummond thanked the Task Force and the facilitators and adjourned the meeting at 5:00 pm.

## *Appendix F*

### **Task Force Values:**

#### **Key Themes From Small Groups, Problem Statements, Individual Perspectives, and Individual Worksheets**

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This Appendix includes the interim products developed by the Task Force as it undertook to identify values relative to tank waste. It begins with a description of the process by which the Task Force identified its values. These products include:

- Key Themes from Small Groups (from June 17). This contains one section for each of the following framework steps of the Tank Waste Remediation System: tank leaks, managing the waste, pretreatment, treatment, and disposition of waste. These themes represent areas of agreement reached in each of the five small groups.
- Problem Statements (from small group work on June 16). The Task Force considers the "problem statements" critical to understanding the values identified in Chapter 2. These problem statements are listed by framework step. Problem statements that fit into no single framework step are listed under Overall Considerations. These problem statements became the basis for the values work on June 17.
- Individual Perspectives on "most important problems" and "most important values" (from June 17). The summary of perspectives was prepared by the facilitation team, based upon the individual worksheets. These perspectives were the basis for small group discussion on June 17.
- Individual Worksheets (matrices completed individually on June 17). These worksheets were used by Task Force members to identify what they considered to be the most important problem relative to tank waste and the most important value they held relative to the problem. Linkages to other parts of the system are indicated by arrows. These matrices formed the basis for the small group discussions and individual perspectives of June 17.

#### **A. PROCESS**

The values presented in Chapter 2 of this Report were developed in a process that began on June 16 and 17 at a two-day Task Force meeting and continued through August. The process of developing values included, first, hearing about key aspects of tank waste issues; second, identifying problems and most important problems in the tank waste system; third, identifying values related to the problems; fourth, selecting key themes in the values; and fifth, identifying broad, overarching issues and specific implementation-related values.

## APPENDIX F

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To be sure that the values articulated were grounded in current realities at the Hanford site, the Task Force began its work by learning about key aspects of tank waste issues. Information was provided through a series of presentations and technical panels that addressed the following topics associated with the Tank Waste Remediation System:

- Tank Leaks (resolving tank leaks and containing leaked wastes)
- Managing Tank Waste (characterization, retrieval, and transfer)
- Pretreatment (no separation, minimum separation, advanced separation, extensive separation, or conversion to interim waste form)
- Treatment (grout, vitrification, ceramics, and/or calcine)
- Disposition of Waste (storage, transportation, and disposal)
- Tank Safety
- Management of the Site
- Training

After hearing about the issues and challenges at each step in addressing tank waste, Task Force members divided into small groups, individually identified what they perceived to be the two most important problems at each step in addressing the waste, and then had discussions in the small groups about the problems identified. These problem statements were compiled by the facilitators and became the basis for the next step in identifying values.

Task Force members were then asked to review the full list of problem statements and to select the *single most important problem* they saw in the Tank Waste Remediation System as a whole. They were asked to write down that problem statement on a special matrix worksheet adjacent to the point in the process (e.g., tank leaks, managing tank waste) where that problem was likely to occur. After identifying their most important problem, they were asked to identify their most important value relative to addressing that problem. In identifying the value, Task Force members could either select from among five evaluation factors (timing, cost, feasibility, the environment, health and safety) or else they could add additional factors.

The Task Force then divided into five small groups, one for each step in the system. (Discussion of a sixth step, tank safety, was deferred.) Task Force members went to the group that focused on the step where their most important problem occurred. Each group had a discussion of the values that group members identified for that step in the system. They also discussed the linkages they saw to other aspects of the system and their values relative to addressing these linkages. Each of the small groups reported its results to the Task Force as a whole, identifying key themes that emerged.

In preparing a draft summary of the values identified by the Task Force, the facilitators compiled the individual worksheets, summarized the small group discussions, and identified themes that emerged from the small group and plenary discussions.

A Subgroup of the Task Force met on June 24 and reviewed the draft summary of values. The Subgroup felt that the problem statements were critical to understanding and

grounding the values. The Subgroup also added language to clarify the problem statements and their relationship to the values. As a result, the problem statements became an integral part of the Summary of Task Force Values. This Summary of Task Force Values was provided to the lead negotiators for the three agencies and to the Task Force on July 1, 1993.

On July 23, the lead negotiators reported to the Task Force on how the draft values product was influencing the negotiations and indicated areas where they needed additional clarification of the Task Force's values. The Task Force then reviewed the draft Summary of Task Force Values and further defined the values. At the end of the discussion, the Task Force authorized the facilitators to make the changes agreed upon and approved the values product.

Following the July 23 meeting, the facilitators revised the Summary of Task Force Values based on the changes agreed to on July 23 and sent them to the Task Force for review. These changes were then reviewed and discussed by the Principles Subgroup on August 6.

**B. KEY THEMES FROM SMALL GROUPS**

Each of the following small group reports summarizes the key themes that emerged during the June 17 small group discussions. These results represent agreement among the Task Force members who were *in the small group that discussed that step*. The number of participants in each small group varied from 2 to 7 because members themselves chose the step where they saw the most important problem. The different formats of the summaries reflect the different styles of the small group facilitators.

**TANK LEAKS**

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**WHAT**

Tank leaks need to be stopped and prevented.

**WHEN**

NOW.

**WHY**

Because of the need to protect the environment and thereby the Native American treaty rights and trusts.

**HOW**

By using best available technology - the choice of which should not be limited by the repository requirement - and which must result in retrievable, reprocessable products as this relates to eliminating tank leaks.

**WHO**

This should be done in a management system that is effective and responsive to leaks and potential leaks in a timely way. TWRS should be based on an economic assessment that reflects life cycle costs and other factors. (For example, potential costs of a repository should not hold up a decision on leaks, and cost of land should be a consideration.)

All this should be done without diminishing efforts to develop or refine technology suitable for addressing either tank leaks or tank management, pretreatment, treatment or disposition.



## MANAGING TANK WASTE

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### *GET ON WITH:*

- Building infrastructure to characterize waste
- So you can stabilize.
- With HEALTH and SAFETY and ENVIRONMENT as the driving force.
- If you learn about pretreatment, great.
- But pretreatment should not drive characterization.

### *OVERARCHING NEEDS*

- ACCOUNTABILITY
- CANDOR
- OPENNESS

**PRETREATMENT**

---

***TIMING***

- Start now with existing technology to go to the final waste form as soon as possible.
- Linkage: Assumptions about disposition of wastes at Yucca Mountain shouldn't dominate decisions about other steps in the TWRS framework.
- Leaks: Take simple steps to yield double-shell tank space for tank transfers.

***OVERARCHING MANAGEMENT AND BUDGET ISSUES***

- The small group prefers spending on real cleanup now, not technology development, pretreatment, or studies.
- Focus spending on the final waste form, not technological development.
- Spending for high tech pretreatment must yield benefits for the ultimate waste form.

***ENVIRONMENT AND DISPOSITION***

- Strive for a high performance low level waste form that is retrievable.

***HEALTH AND SAFETY***

- TWRS needs a higher priority on funding and oversight for health and safety, particularly in relation to tank farm workers.

**TREATMENT**

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***FUNDING:***

- There's a concern that funding will run out if there is not demonstrated progress on the cleanup.
- There's a concern that money is not being used effectively, and in some cases, is politically driven.

***TRANSPORTATION:***

- It is a waste of money to study transferring waste for treatment away from the Hanford site. It diverts money that could be spent cleaning up.
- Transportation increases the risk to public/worker health and safety and the environment. Therefore, minimizing transportation will reduce risks to public/worker health and safety and to the environment.

***RETRIEVABILITY:***

- Monitored retrievable storage is desirable.

***RISK:***

- Stabilized waste reduces risk to public/worker health and safety and the environment.
- Hanford (only) waste in stabilized form should be stored at Hanford pending ultimate disposition.

**DISPOSITION OF WASTE**

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In discussing the various paths people selected, several themes emerged. The most important theme is that the design route keeps in mind the ultimate goal of safe and proper storage/disposal of the waste as each phase of the TWRS is implemented.

This design system at each point reflected the following values:

- Protect the environment, worker and public health.
- Assume temporary storage will occur at Hanford but don't assume that all radionuclides should be here forever.
- Minimize the land devoted to accomplish the cleanup.
- Pick available technology and get on with it.
- Do enough R & D so that improvements can be made over the life of the cleanup.

Tank leaks were seen as a somewhat separate problem from the other steps in the framework. The problem with tank leaks is that the leaks are impacting the environment now. Most, but not all, believed these leaks could also eventually have harmful worker/public health impacts. The value of timing and getting on with addressing the risk was generally shared. In terms of feasibility, selections of technological options should address the leaks without the option creating new dilemmas for the remediation problem of the tanks.

### C. PROBLEM STATEMENTS

The problems reported in this section were identified by the Task Force on June 16 after the Task Force heard presentations relative to tank leaks, managing the waste, pretreatment, treatment and disposition. Working in small groups, Task Force members wrote down the two most important problems they saw at each step in the process of addressing tank waste. They discussed the problems and then clustered them under the following headings: health and safety, timing, feasibility, cost, environment and management. Problems that did not fit into the clusters are included but are not underlined. Finally, problems that did not fall into the above categories are grouped together at the end of this section under "Overall Considerations."

Sentences under each heading that precede the problem statements were added as clarification by the Principles Subgroup on June 24, 1993.

### TANK LEAKS

It is important to recognize that preventing new leaks and taking action now (as described below) are two different issues.

Double-shell tank capacity is important; simpler solutions are preferred.

"Get on with it" means to use simple, environmentally-sound, available, less-costly solutions. It reflects a sense of urgency and a desire for reasonable study, then for progress (action).

*Health and Safety*  
No entries

*Timing*

#### Prevent New Leaks

- Prevent new leaks
- Remove liquids
- Pump tanks; problem in leaking tanks
- Remove liquids
- Contaminated soil under leaking tanks

#### Take Action on Tank Leaks Now

- Tanks wastes won't be retrieved soon; there will be more leaks
- There are no subsurface barriers
- Retrieval delay
- Cost vs. time on emptying tanks

## APPENDIX F

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### *Feasibility*

#### Lack of Data

Lack of data to judge urgency

Lack of confidence in data

#### Effectiveness of Post-Leak Measures

Barriers recovery: how to judge the relative ability of either to solve problem

Barrier technology and prevention of leaks

Containment

#### Need Storage Capacity

Double Shell capacity

Tank space

#### Infrastructure

Need accurate and timely monitoring data

Immediate action on tank problems

Monitoring capability

Complete characterization of tank contents

#### Leak Priority

Do we know the real character of the leaks?

To prevent leaks and act when detected; need ramp up of leak detection, monitoring; space in double-shell tanks should be available

#### Leak Solutions

More options put on table

Barriers are good idea - how fast compared to removal cost comparison.

Do we do both?

More tanks; inadequate storage: stop leakers

Can all the materials be transferred to "better" tanks?

### *Cost*

#### Money: We Need a Decision Process

Funding driven by politics, not science

Ditto

USDOE's lack of commitment to funding

Faster, more efficient productivity

More double-shell tanks now

### *Environment*

#### Integration Program and Goals

Land use impact on ground water

Integration of leak mitigates with effluent stream deposition

Include surrounding environment as part of the waste tank problem and solution

Prioritize towards final solutions (i.e. processing and ultimate disposal)

Lack of integration with other tank programs (pretreatment, disposal, etc.)

Cleanup of tank leaks (post) management decontamination & decommissioning

Keep in Mind

When transferring to new storage (liquids) establish in geographic areas of least importance in terms of wildlife habitat

*Management*Information - Communication, No PR

Information available

Information management/presentation

Transmit information to community in "user friendly" manner

Magnitude of disaster if Columbia River contamination is not recognized

Access to facts/information in a timely manner

Goals

Resolution of potential for leaks (near-term) until cleanup can occur

Not waiting until "best" technology can be developed (time); more double shell tanks

Stop current leakers

Prevent future leakers

Management Structure

Need competitive, open process for technologies resolving tank waste release threats

Publicly accountable for performance

Lack of documentation necessary to effectively and quickly identify and characterize new leaking tanks

Process for determination of where resources to upgrade infrastructure to deal with tank safety problems: tanks transfer and additional tank capacity

**MANAGING TANK WASTE**

Characterization is not the only priority. There are immediate health and environmental risks that need to be addressed. Infrastructure upgrades are important. We need to make progress on all fronts at-once.

*Health and Safety*Safety

How to assure worker/public health safety

If we haven't characterized the waste, how do we know the real risk?

*Timing*Characterization

Need for accelerated improved characterization

Adequate characterization

## **APPENDIX F**

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### **Feasibility**

#### **Managing Tank Space**

- Need to prioritize tank usage and minimize waste
- How to assure adequate DST waste space
- Consider side wastes

#### **Infrastructure**

- Lack of infrastructure
- Infrastructure outdated
- Too Little Research and Development
- Move ahead with what we know - store it until later
- Need to upgrade infrastructure
- FIT management of waste with waste from D&D
- Lack of tank capacity

#### **Retrieval Technology**

- Retrieval methods may cause more leaks (barriers?)
- Retrieval generates more waste stream
- Use barrier techniques to speed retrieval of tank waste
- Immature retrieval technology
- Look at available technology around us - don't be intimidated by repository issue (the unknown)
- Double-shell tank space is short but capacity will be used for non-tank safety liquids
- Prioritize space for single-shell tanks - apply waste minimization site-wide

### **Cost**

#### **Characterization**

- Program is costly and not productive

### **Environment**

- No entries

### **Management**

#### **Emergency Planning**

- Adequate emergency response
- Emergency management plans must be put in place
- Prioritization of infrastructure and safety culture upgrades - both must be high priorities and protected above hi-tech investment
- Consider tank waste and that which has leaked out as one unit

## **PRETREATMENT**

The high cost of high tech pretreatment and R&D threatens funding for higher performance low-level waste form, vitrification, and clean up.



*Health and Safety*Safety

Safety in treatment characterization

*Timing*Get on With It

Use best available technology - get on with it

Resistance to use available technology

Need to reduce delays and rely on known technologies

How to allow greatest flexibility and short start-up time

Too many choices

Pretreatment is priority #1

How to weigh time? How long a delay for design is acceptable to get what benefit?

*Feasibility*

Poor waste character

Poor infrastructure

Technology Doubts

Doubtful that advanced separations will ever work

Don't develop wastes that have to be dealt with later

Use existing technology - keep it simple and cheap

Fewer Steps = fewer risks, fewer delays, fewer emissions, fewer (lower) capital costs

Are we confident of the feasibility of the different pretreatment technologies and risks?

Decisions to date driven by goal of minimizing canisters of high level waste and decision criteria found 3 ways out of 18 to count that - public willing to store canisters here

*Cost*

Fluctuating budget restraints

Transportation and Cost

Transport

How to minimize shipment to repository and consideration of repository costs

Huge capital cost for pretreatment jeopardizes cost for vitrification and other priorities (including ER, Tank Safety)

*Environment*No New Waste/Contamination

Elimination of new hazardous wastes

Creation of new wastes

Reduce the waste volume because we probably will have to keep our own

No further ground water contamination through pretreatment

*Management*

No Entries

## TREATMENT

The form for long-term storage and storage facilities needs to be based on the principle of accepting the fact that interim storage, at least, of the waste will occur for the foreseeable future at Hanford.

### *Health and safety*

#### Safest Waste Form

Need to emphasize/ensure retrievability

Need to emphasize use of "best waste form" and reduction of additional contamination/harm

How to assure long-term public health and safety

#### Unknowns

If we are unsure of the technology and outcomes of treatment, we must be concerned about the long-term public health concerns

What happens if none of the treatment works?

### *Timing*

#### Get on With It

Use best available technology

Resistance to use available technology

#### Stabilization

Proof that hot rads can be stabilized using vitrification

Provides stabilization at reasonable cost to public

Process provides stabilization soon, and will be long term

Stabilization of waste is a priority ASAP

### *Feasibility*

#### Unknowns

Limited options

Too many unknowns

Unknown dollars available

How to reduce transport and assure low environmental impacts from treatment

No place to ship to

#### Retrievable

If vitrification, no super vitrification - small melters only!

### *Cost*

No Entries, but see the entries for Pretreatment

### *Environment*

#### Waste Minimization

Creation of new waste

Treatment may create more waste to soil column - must minimize

On-Site Treatment

Done at Hanford, not shipped off-site until treatment complete

*Management*

No Entries

**DISPOSITION OF WASTE**

The form for long-term storage and storage facilities needs to be based on the principle of accepting the fact that interim storage, at least, of the waste will occur for the foreseeable future at Hanford.

Training for everyone who will be on the site is critically important.

*Health and safety*Transportation

Transportation impacts

Transportation safety issues (accidents, proliferation)

Minimize transport! which lowers overall risk!

Retrievability

Retrievability is a need

We will store waste long time here; how do we minimize short and long term risks?

*Timing*

No Entries

*Feasibility*HLW/Yucca?

No commitment to a permanent waste disposal facility

How to reduce transport and assure safe on-site storage

How to assure permanent disposal

Need to accept reality of Yucca Mountain and plan with expectation of long-term retrievable storage at Hanford

High level waste stored safely until shipped to repository

Can't rely on off-site disposal

Too far out on horizon

Low level waste

Character of waste stored on site needs (safe)

"Safe" LLW disposed of on-site in the 200 Area

Other

Need to minimize irreversible/irretrievable disposal

Resistance to use available technology

## **APPENDIX F**

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### **Integration**

- Integrate disposition with other waste sites (performance)
- Integrate TWRS with repository and MRS in a systems evaluation
- Integrated strategy for disposition of all waste
- Don't let volume of waste generated and storage of it drive technology being looked at for dealing with it
- In modeling technology - do not assume repository capacity or use

### **Cost**

#### **\$ Land Value**

- Need to capture full value of land costs

### **Environment**

#### **On-Site Storage**

- Monitored Retrievable Storage for "on-site waste only" as a viable option
- Above-ground storage high level waste but set limits on how long we keep the long term high level waste
- Need to act "as if" waste is here forever (repository is assumption)

#### **Grout**

- Long-term stability of low level waste
- Grout doesn't adequately protect public, workers and environment
- Reduction of waste volume (grout is issue here)
- Stay within the 200 Area with waste
- Minimizing use of land for disposal
- If MRS site is at Hanford, no outside waste will be accepted
- Minimize irreversible, irretrievable disposals and use of land for disposal

### **Management**

- No Entries

## **OVERALL CONSIDERATIONS**

These problem statements did not fit under any one of the five framework steps. Rather, they reflect ideas held by Task Force members about how the Tank Waste Remediation System as a whole should be managed.

### **Health and safety**

- No entries

### **Timing**

#### **Technology**

- Use available technology and begin now
- Tendency to investigate new technology
- Minimize technical development
- Learn from others but don't wait

**Time**

Time factor

Small instead of large facilities

Don't let total needed treatment constrain start of treatment

**Technology**

Not all technology is good. Don't necessarily develop just because we can conceive of it (ramifications for future).

Use best AVAILABLE treatment for low-level waste

**Feasibility**

Concern for chemicals (volume) needed to process waste (limit highway loads)

**Parallel development of technical options for clean-up**

How to insure money and meaningful effort for parallel pretreatment and vitrification option development

Pretreatment should lead to treatment options that provide near-term stabilization at reasonable cost but with some consideration of future treatment and/or needs

**Upgrade infrastructure**

How will the negotiators ensure that the assumptions used in the new technical strategy are not overly optimistic (resulting in "unforeseen" delays in the development, construction, and operation of the critical components of the cleanup system)?

Consider types of and (time) development of power resources needed for cleanup.

**Cost****Money**

Lack of reliable cost data by which to make decisions

Costs

No funding constraints

Working toward zero risk has a cost that must be communicated to public

Full disclosure of all funds to be used and USED!

**Environment****Natural Resources**

Elimination of dedication of natural resources

Don't use biosphere for disposal

Keep in mind habitat protection when locating infrastructure and new facilities.

Not sacrifice "clean" areas of Hanford for mitigation of other areas.

**Management****Decision Process**

Public trust/accountability

Repository uncertainties great. Still, repository concerns driving decision making

TWRS new strategy doesn't represent technical information-what process?

Decision on repository is stalling other decisions  
Lack of publicly accountable, technically/scientifically credible process  
WA St. DOE/EPA interpretation of regulations causes delays - dual  
process with CERCLA and RCRA  
Decisions are made based on assumptions and politics  
Regulations cause unnecessary delay

**Management**

Fundamental management problems - lack of respect for public/worker  
health and safety  
DOE's perception of risk is a problem  
Need a new management culture (competitive bidding)  
Initiative for research at Hanford

**Management**

Competitive bidding allows true cost-effectiveness  
The competitive bidding process! Use technical papers to be submitted to  
researchers world-wide! Set up technical review panel controlled  
by State of Washington which can then submit technical papers to  
stakeholders.  
Use competitive bidding process to find realistic solutions  
How can the negotiators ensure that negotiated milestones are achievable  
and that DOE will be able to support the completion of such  
milestone on time?  
Can the negotiators ensure that we are not in a position of finding current  
proposed technologies to be unsatisfactory, and again require  
rebaselining 5-10 years in the future?  
Management structure of DOE and the contractors: Is it adequate to  
ensure that problems will be recognized, characterized, and  
remedial action taken in a fashion to protect health and safety and  
minimize environmental risks?  
Management structure of DOE and the contractors: Is it adequate to  
ensure the safe completion of the required activities and tasks?  
Process openness for workers (identification of problems at the site) - no  
fear

## D. INDIVIDUAL PERSPECTIVES

This section summarizes the individual perspectives members brought to the small groups on June 17. These summaries are based on the worksheets that Task Force members filled out on June 17.

### TANK LEAKS

The four members of the small group on tank leaks discussed tank leaks primarily in terms of timing. Three members highlighted the value of *timing*. One member identified *treaty rights* as the primary value. All members felt a sense of urgency to stop current leaks and prevent new leaks.

One small group member said that *continual harm to the environment* from tank leaks is the problem. The predominant value is *timing*: "Need to stabilize now." This will protect the *environment*.

The second small group member indicated that the problem is *continued environmental degradation and safety issues*. The predominant value is *timing*: "Act ASAP to stop leaking tanks and prevent future leaking." Under *cost*, there should be construction of new tanks as an interim storage measure. Under *feasibility*, best available barrier technology should be employed.

The third member believed that the biggest problem is *increasing tank leaks and resulting environmental damage*. The predominant value is *timing*: "Act immediately to prevent leaks, [thus increasing] safety and protecting the environment." Regarding *feasibility*, best available technology should be used.

The fourth member saw the *abrogation of treaty rights* as the problem. The predominant value is *treaty rights*, which are threatened by "contamination of fish and the environment." *Management* suffers from poor oversight.

## MANAGING TANK WASTE

The seven members of the small group on managing tank waste defined the problem in terms of management and reducing risk to health, safety, and the environment. On their worksheets, four people highlighted *health and safety* values, two people highlighted *timing* values, and one person highlighted the *honesty of the process*.

One small group member saw the problem as the *de-emphasis on cleanup* by the Federal government. The predominant value is *health and safety*: "Concern for long-term public health issues."

Another member believed that protecting human *health and safety* is the problem and predominant value. The *environment* is threatened by a fire or explosion that would cause a release of tank waste. The *management* culture at Hanford denies problems.

A third small group member identified *accountability* as the problem. The predominant value is *timing*: "Negotiate milestones that are achievable and completed on time." To insure *health and safety*, there should be public notification of leaks. *Cost* considerations require openness about the amount of money spent. At the managing tank waste stage, there should be consideration of power needs for cleanup.

*Inadequate infrastructure* was the problem for a fourth member. The predominant value is *timing*: "Get on with it." Avoid further harm to the *environment*.

A fifth small group member indicated that *stagnant management and lack of honesty* is the problem. The predominant value is *health and safety*: "Protect people and the environment first and foremost." *Timing* concerns suggest the use of current rather than predicted technologies. Putting off action will lead to higher *cost*.

*Radiation exposure to people and the environment* was the problem for a sixth member. The predominant value is *health and safety*: "Don't exceed legal standards."

The last small group member said that the *political agenda driving the solution* was the problem. The predominant value was the *honesty of the process*. In terms of *timing*, apply techniques that we know now and defer action on issues where information is insufficient. *Feasibility* will not be easy to judge because there is honest disagreement about what is or is not possible.



**PRETREATMENT**

Two people discussed pretreatment in a small group. One person highlighted the *cost and funding* value and the other member highlighted the issue of *timing*.

One small group member saw the problem as *increasing steps and technology increases risks, delays, costs and emissions*. The predominant value is *cost and funding*: "High tech has high R&D costs with high capital costs with no benefit for performance of final waste form." With respect to *timing*, simpler technology can show quicker progress. Under the *management* value, the budget process should be open and the percentage of funds used for actual cleanup should increase.

The other small group member identified the *tendency to lock onto "big fix" solutions* and the fact that *some technologies are better developed than others* as the problems. The predominant value is *timing*: "Use known technology to start now - start small - remain flexible - show progress." Pretreatment should minimize additional new waste.

### TREATMENT

The three members in this small group all focused on issues related to treatment because they perceive that stabilizing/immobilizing the waste so that it does not pose a threat to public/worker and environmental health and safety is the most important issue related to tank waste. However, each of the three identified a different problem as "the most important to solve" and thus each identified different values as the most important.

One small group member thought that the *migration of liquid wastes* was the most important problem because of the risk that the migrating wastes pose to public/worker and environmental health and safety. Therefore, the predominant value related to *health and safety*. His chief cleanup goal was rapid stabilization of the waste to minimize health and safety risks. In terms of *timing*, this stabilization should be completed by 2018, the date identified in the 1989 Tri-Party Agreement. Under *feasibility*, there was a concern that waiting until new technology could be developed would be too long a wait. There was a desire to use existing, appropriate technologies to get started as soon as possible. It was suggested that tank waste and leaked waste should be treated as a single unit to protect the *environment*. There was also a concern that those *managing the waste* could not be trusted to identify existing leaks or to select a technology to stabilize the waste quickly.

For the second small group member, the most important problem was the *perceived lack of openness in the bidding process* that meant that those charged with cleaning up the waste did not have access to the best possible technologies that have been developed world-wide. The key value was *timing* because of a belief that competitive bidding would accelerate the entire cleanup process. Another value related to *cost*, where competitive bidding is expected to lower overall cleanup costs. Using best available technology should result in a *feasible*, rapid, and effective cleanup.

The third small group member considered the most important problem to be *the likelihood that congressional funding for the cleanup would run out unless there were demonstrated progress* in the cleanup. *Feasibility* was identified as the most important value, based on a belief that the appropriate technologies will or should be developed at Hanford because of the diversity of Hanford's wastes. *Timing* was an important issue because the final disposition depends on the resolution of pretreatment and treatment issues. The health and safety of the *environment* was seen as key to the success of the cleanup.

## DISPOSITION OF WASTE

Six people found that their problem statements fell under the disposition framework step. Most selected environmental, worker, and public health as the value disposition of waste should reflect as it is resolved. Treaty rights constituted another value that supported protecting the environment. Most of the people had connections between the disposition of waste and other aspects of the framework. The original values of environmental, worker, and public health were generally reflected strongly in those connections.

One small group member didn't explicitly identify the problem. His predominant value, however, is *treaty rights*: "Minimize the land usage." To protect the *environment*, don't move the waste to Savannah River. Any transportation that does occur requires hazardous materials response teams for corridor communities to minimize risk to *health and safety*.

The second group member saw *ground water* and *transportation safety* as the problems. The predominant value is *health and safety*: "Identification and mitigation of current problems - ensure TWRS decisions protect public health and environment." As regards *timing*, get on with it.

Guaranteeing *unrestricted use of the site 100 years in the future* is the biggest problem for the third small group member. The predominant value is *environment*: "Land and waters should be left unrestricted ASAP and no later than 100 years hence."

The fourth small group member noted that the *ultimate disposition of high level waste cannot be resolved now given present uncertainties*. The predominant value is *feasibility*: "The 'system' designed and implemented must solve entire waste problem." There should be no long term danger to *health and safety*. *Timing* requires getting on with it but also doing it right. Under *cost*, balance full cycle/full system cost. Interim storage should be safe to protect the *environment*. TWRS should leave a viable *economy* behind.

For the fifth member, the *poor nature of the grout waste form* is the biggest problem. The predominant value is *health and safety*: "[Grout] doesn't adequately protect health and safety of public and workers." Grout also doesn't protect the *environment*.

The sixth small group member believed that *DOE must take care of what it created over the past 50 years*. The predominant value is *timing*: "DOE must decide on type of [long and short term storage on-site] with technology we know now." *Health and safety* requires protecting workers. To protect the *environment*, protect the ground water. To improve *management*, show a written 5, 10, 15, and 20 year plan for cleanup.

**E. INDIVIDUAL WORKSHEETS**

This section reproduces the individual worksheets filled out by Task Force members on June 17. As noted at the bottom of the worksheets, each Task Force member identified what he or she considers to be the most important problem associated with tank waste. Members then described their most important values relative to that problem. The most important problem is in bold in the far left column. The most important values are printed in bold type to the right of the problem statements. Other values identified are printed in plain type. Arrows represent the connections between various values.

		Values						
		Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
Problem Statements	<b>Tank Leaks</b> Tank leaks and resulting environmental damage will only increase		Act immediately to prevent leaks, increase safety and protect the environment ↓	→	Use best available technology ↑			
	<b>Managing Tank Waste</b>		Accelerate characterization and infrastructure upgrade. Act now. ↓		Use best available technology ↑			9
	<b>Pretreatment</b>				Use best available technology	→	Pretreatment chosen should not be driven by repository cost considerations	4
	<b>Treatment</b>		Minimize delays			Retrievability of final product (waste form) imperative ↑		1
	<b>Disposition</b> Present plan does not adequately protect health and safety of Washington citizens	Ensure adequate protection of health and safety (i.e. no grout)			→	Retrievability of waste form imperative (not irreversible)		3
								5

Each Task Force member identified what they consider to be the most important problem associated with tank waste. Members then described their most important values relative to that problem. The most important problem is in bold in the far left column. The most important values are printed in bold type to the right of the problem statements. Other values identified are printed in plain type.

Values		Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
Problem Statements	<b>Tank Leaks</b> Tanks continue to leak. Leaks threaten Columbia River environment		Deal with worst tank first. Take to closure. Protect safety and environment.	Put most money on real cleanup		Protect from more leaks and groundwater threat		
	<b>Managing Tank Waste</b> Still can't characterize, infrastructure lacking, all funding may dry up, tanks could explode some worse tank capacity		Conserve tank capacity for most dangerous tanks	Invest in DS tanks				
	<b>Pretreatment</b> Some technology better developed than other		Use known technology to start now - start small, remain flexible, and show progress		Scale in as technology develops. Minimize side waste			
	<b>Treatment</b> Waste is not in protected form. Treatment needs R&D to be improved (time lag)		Use known/appropriate technology to start up	Conserve dollars	Start now with known/appropriate technology, continue R&D			
	<b>Disposition</b> Disp. will mean storage for near term. Lots of contaminated land - use it.		This generation must solve problem - in a safe form			Performance as long as risk. Do no harm. Do not contaminate clean land.	Depend only on existing factors - (Yucca??)	Retrievable if problem or better technology

Each Task Force member identified what they consider to be the most important problem associated with tank waste. Members then described their most important values relative to that problem. The most important problem is in bold in the far left column. The most important values are printed in bold type to the right of the problem statements. Other values identified are printed in plain type.

		Values					
Problem Statements		Health & Safety	Timing	Cost	Feasibility	Environment	Other
	<b>Tank Leaks</b>	Workers must be protected. Openness - no fear	Stabilize waste now		Can't depend on future technological developments to achieve milestones	Consider tank waste and leaked waste as one unit	
	<b>Managing Tank Waste Accountability</b>	Public notified of leaks	Negotiated milestones are achievable and completed on time	Openness on dollars spent and how		Awareness of power needs for clean-up.	
	<b>Pretreatment</b>		Yes. Parallel technology development	Can we depend on funding?	Resolve infrastructure issues immediately		
	<b>Treatment</b>		Get vitrification plant built		No trucking to Savannah river		
	<b>Disposition</b>	If MRS site at Hanford, no outside waste			Waste in safest form possible irrespective of volume and the possible lack of off-site storage		

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Each Task Force member identified what they consider to be the most important problem associated with tank waste. Members then described their most important values relative to that problem. The most important problem is in bold in the far left column. The most important values are printed in bold type to the right of the problem statements. Other values identified are printed in plain type.

		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b>	Prevention better than remediation				Tank Waste and leaked waste need to be considered one unit	Management: Still can't be trusted to recognize new leaking tanks
	<b>Managing Tank Waste</b>						Management: Structure does not adequately bring problems to management and public attention
	<b>Pretreatment</b>				Can't depend on new technology to produce timely pretreatment		Management: Can't be trusted to pick technology to most rapidly resolve pretreat problems and get on with it
	<b>Treatment</b> Liquid wastes might migrate to the environment and people	Rapid stabilization can minimize health and safety risks	Don't let stabilization completely slip past year 2018		Can't depend on new technology development or scale up		Management: Can't be trusted to pick technology to rapidly stabilize tank wastes
	<b>Disposition</b>				No trucking of wastes to Savannah River	Can't depend on transport of unstabilized wastes - inadequate stabilized wastes	Management: If we don't get on with it we will lose funding

Each Task Force member identified what they consider to be the most important problem associated with tank waste. Members then described their most important values relative to that problem. The most important problem is in bold in the far left column. The most important values are printed in bold type to the right of the problem statements. Other values identified are printed in plain type.



		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b> (and other emergencies related)	Overriding concern is that all off-site populations are protected throughout					
	<b>Managing Tank Waste</b> The political agenda will drive the solution rather than _____		Apply what we know now, defer the issues we don't have complete information on and go hard for R&D on the unknown		Honest agreement/ disagreement on what is/ is not possible. Do not promise more than can be delivered.	←	I want to be assured that the process will be honest (means candor, accountability, TRUST) throughout the process. Stop the games
	<b>Pretreatment</b>						
	<b>Treatment</b>						
	<b>Disposition</b>						

Each Task Force member identified what they consider to be the most important problem associated with tank waste. Members then described their most important values relative to that problem. The most important problem is in bold in the far left column. The most important values are printed in bold type to the right of the problem statements. Other values identified are printed in plain type.

Problem Statements	Values						
	Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
	<b>Tank Leaks</b>				Stabilize Liquid Waste to prevent escape to environment		
	<b>Managing Tank Waste</b>	Development of new technology should require new looks at health and safety training					
	<b>Pretreatment</b>	Priority issue...lack of resolution holds up the ultimate resolution					
	<b>Treatment</b> Unless progress is shown funding will dry up			The technology will or should be developed here because of the diversity of the Hanford site			
	<b>Disposition</b> Quit exploring shipment of waste out of Hanford, i.e., to Savannah River		Splits funding sources and minimizes progress of actual cleanup	Use the "monitored retrievable storage" concept...with "Hanford waste only"	Transportation poses severe risks to the environment and galvanizes public opposition		

Each Task Force member identified what they consider to be the most important problem associated with tank waste. Members then described their most important values relative to that problem. The most important problem is in bold in the far left column. The most important values are printed in bold type to the right of the problem statements. Other values identified are printed in plain type.

		Values						
		Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
Problem Statements	Tank Leaks					Make decontamination and decomissioning of tank sites acceptable for unrestricted use		
	Managing Tank Waste					Minimize risk for catastrophic accident that would contaminate the environment		
	Pretreatment Not necessary		Minimum time	Minimum cost	Maximum feasibility			
	Treatment					Provide waste form that is adaptable to any future long-term storage disposal - including at Hanford		
	Disposition Disposal management not restrict future usage 100 years hence					Land, water, etc. be left unrestricted as soon as possible and no later than 100 years hence		

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<i>Values</i>		Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
<i>Problem Statements</i>	<b>Tank Leaks</b>		Stabilize to stop impact on environment		Fix should not complicate future clean-up (i.e. barrier)	Serious long term contaminates must be eliminated		
	<b>Managing Tank Waste</b>	Characterization and handling must be safe						
	<b>Pretreatment</b>		Truly "safe" low level waste must be removed as soon as possible to yield space	Balanced full cycle/Full system cost	Solution must address short and long term parameters (grout now or later)			
	<b>Treatment</b>			Balanced full cycle/full system cost	Volume cannot overwhelm repository			
	<b>Disposition</b> Given all the uncertainties, we will not resolve immediate problems (H&S, env., etc.) nor immediate disposal of HLW and LLW	No long term health and safety danger	Get on with it, But do it right	Balanced full cycle/full system cost	The "system" designed and implemented must solve <u>entire</u> waste problem	No long term impact. Interim storage safe	Leave a viable economy behind	

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		Values					
Problem Statements		Health & Safety	Timing	Cost	Feasibility	Environment	Other
	<b>Tank Leaks</b>		Simple DST (double-shelled tank) pretreat and simple DST construction yields space for transfers	Need to protect dollars for immediate action and detection	Competitive process for technologies for barriers - available now if allowed to be competitive	Increase funding % for remediation and prevention of contaminant spread	<b>Management Accountability</b>
	<b>Managing Tank Waste</b>	Prioritization for funding and oversight need strengthening	Make tank space available with simpler technology for pretreatment				
	<b>Pretreatment</b> Increasing steps and technology... increases risks, delay, costs, and emissions		Simpler technology can show progress quicker	Hi tech has high R&D cost with high capital costs with no benefit for performance of final waste form			
	<b>Treatment</b>		Complex pretreatment will delay simple vitrification	Hi cost R&D pretreatment may use up funds for vitrification and other priorities			
	<b>Disposition</b>			Number of canisters irrelevant		Higher leach ability, performance of LLW final form. Retrievable	

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		Values					
Problem Statements		Health & Safety	Timing	Cost	Feasibility	Environment	Other
	<b>Tank Leaks</b>				Open process would assure best available technology	Best technology which assures protection of environment	
	<b>Managing Tank Waste</b>			Competitive bidding would keep costs down	Competitive bidding would assure best available technology		
	<b>Pretreatment</b>		Competitive bidding would accelerate clean-up	Competitive bidding would lower actual cost			
	<b>Treatment Process is not "Open" for world-wide competitive bidding</b>		Competitive bidding would accelerate clean up progress	Would lower actual clean-up costs			
	<b>Disposition</b> Increased transportation increases risks and exposure	Lowest total risk to workers, public, and environment				Retrievability and long term stability of waste form	

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		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b>					Long term land value needs to be taken seriously	
	<b>Managing Tank Waste Management might stay stagnant and unchanging for too long - need honesty</b>	Protect people and environment first and foremost	Need to go with known technology	To put off action will cost us much more in long run			
	<b>Pretreatment</b>			Cost in not considering pre-treatment			
	<b>Treatment</b>		Accelerate process with what is known				
	<b>Disposition</b> Long term on-site storage	Need to be able to retrieve all waste forms				Transportation needs to be kept to a minimum	

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		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b>	Air releases can hurt workers and public				Explosion/fire/tank failure impacts environment	
	<b>Managing Tank Waste</b> Protecting human health and safety is paramount	Management of wastes - must indicate health and safety as a first priority	Immediate improvement to infra structure?				Management and accountability Culture denies problem
	<b>Pretreatment</b>	Wrong handling can result in explosion/fire					
	<b>Treatment</b>						
	<b>Disposition</b>						

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		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b>		Show progress			Take out liquid - stop leakage	
	<b>Managing Tank Waste</b>						
	<b>Pretreatment</b>			How we pre-treat or treat is determined by our decisions on disposition			
	<b>Treatment</b>						
	<b>Disposition</b> We (DOE) must take care of what we created over the past 50 years	Protect workers	DOE must decide on type of on site storage, both long and short term, with technology we know right now . Get on with it.			Protect ground water	Management Show a written 5-10-15-20 year plan (Budget)

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Problem Statements	Values						
	Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
	<b>Tank Leaks</b> Lack of stabilization continues to harm the environment	Need to stabilize now ↓			Protect groundwater, soil, river, etc.		
	<b>Managing Tank Waste</b> Location of new infrastructure may be sited over critical habitat	Start now ↓			Keep habitat protection in mind ↑		
	<b>Pretreatment</b>	Get on with it ↘	Use available technology today which includes retrievability				
	<b>Treatment</b>	Get on with it →	Use AT today with retrievability				
	<b>Disposition</b> Don't take off-site waste				Minimize land use (Don't go beyond 200 area) keep habitat protection in mind		

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		Values						
		Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
Problem Statements	<b>Tank Leaks</b>	Leakage - path to river must be limited				Leakage path to river must be limited		
	<b>Managing Tank Waste</b>	Don't exceed legal standards						
	<b>Radiation exposure to people and environment</b>							
	<b>Pretreatment</b>							
	<b>Treatment</b>							
	<b>Disposition</b>	Ultimate form and location must meet regulations				Same as health and safety		

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		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b>						
	<b>Managing Tank Waste</b>						Don't cause future cleanup problems (irreversible)
	<b>Pretreatment</b>				Too much technology development (not feasible)		
	<b>Treatment</b>				Better technology exists. Use best technology (relatively available) - pilot plant in 3-5 years		
	<b>Disposition</b> Grout is a poor waste form	Doesn't adequately protect health and safety of public and workers				Doesn't adequately protect environment. Don't contaminate more land/groundwater	

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		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b>					Concern for long-term and environmental issues	
	<b>Managing Tank Waste</b> De-emphasis on the clean-up by Feds. Decrease funding or divert dollars	Concern for long-term issues	Get on with it				
	<b>Pretreatment</b>						
	<b>Treatment</b>				Concern for existing technology		
	<b>Disposition</b>	Eliminate accidents during transport				Eliminate accidents during transport	
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		Values					
		Health & Safety	Timing	Cost	Feasibility	Environment	Other
Problem Statements	<b>Tank Leaks</b>					Avoid further harm	
	<b>Managing Tank Waste</b>		Get on with it			Avoid further harm	
	<b>Inadequate infrastructure</b>						
	<b>Pretreatment</b>				Minimize R&D for implementation		
	<b>Treatment</b>				Minimize R&D for implementation		
	<b>Disposition</b>				Minimize R&D for implementation	Avoid long-term harm	
	Uncertain method/ place for disposition						

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		<i>Values</i>					
		<b>Health &amp; Safety</b>	<b>Timing</b>	<b>Cost</b>	<b>Feasibility</b>	<b>Environment</b>	<b>Other</b>
<i>Problem Statements</i>	<i>Tank Leaks</i>						
	<i>Managing Tank Waste</i>						
	<i>Pretreatment</i>						
	<i>Treatment</i>						
	<i>Disposition</i>	Haz Mat teams for corridor communities				Don't move it to Savannah River, health and safety of public	<b><i>Treaty Rights</i></b> <b>Minimize the land usage</b>

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<i>Values</i>		<b>Health &amp; Safety</b>	<b>Timing</b>	<b>Cost</b>	<b>Feasibility</b>	<b>Environment</b>	<b>Other</b>	<b>Other</b>
<i>Problem Statements</i>	<b><i>Tank Leaks</i></b>						<b><i>Treaty Rights</i></b>	<b><i>Management</i></b>
	<b><i>Abrogation of Treaty Rights</i></b>						<b><i>Contamination of fish and environment</i></b>	<b><i>Continued poor oversight</i></b>
	<b><i>Managing Tank Waste</i></b>				Can't manage tank farms	Unacceptable delays to cleanup		
	<b><i>Pretreatment</i></b>					Do no harm to groundwater/ Columbia River		
	<b><i>Treatment</i></b>					Do no harm to groundwater/ Columbia River		
	<b><i>Disposition</i></b>	Haz Mat teams for corridor communities				Don't move it	<b><i>Treaty Rights</i></b> Minimize land consumed - used	

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<i>Values</i>							
<i>Problem Statements</i>	<b>Health &amp; Safety</b>	<b>Timing</b>	<b>Cost</b>	<b>Feasibility</b>	<b>Environment</b>	<b>Other</b>	<b>Other</b>
	<b>Tank Leaks</b> Continuation of environmental degradation and safety issues	Act as soon as possible to stop leaking tanks and prevent future leaking	Construct necessary double shelled tanks as interim storage measure	Use best available barriers and technologies where required			
	<b>Managing Tank Waste</b>			Prioritize tank use - top priority to stop leaking		Keep waste in retrievable form	
	<b>Pretreatment</b>				Minimize generation of new waste		
	<b>Treatment</b>	Emphasize/ ensure retrievability					
	<b>Disposition</b>						

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Values							
	Health & Safety	Timing	Cost	Feasibility	Environment	Other	Other
<b>Tank Leaks</b> Stop leaks now	↑↓	Get on with it	Balanced		↑↓		
<b>Managing Tank Waste</b> New tank space safety	↑↓	Get on with it			↑↓		
<b>Pretreatment</b> Use best (sulfur, glass, cullet) available technology. Get on with it	↑↓	Get on with it			↑↓		
<b>Treatment</b> Vitrification - transport what we can. Safely store other safe form	↑↓				↑↓		
<b>Disposition</b> Transport safety Groundwater	Identification, mitigation of current problems, risk unacceptable. Assurance TWRS decisions protect public, environment and safety	Get on with it			Identification, mitigation of current problems, risk unacceptable. Assurance TWRS decisions protect public, environment and safety		

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